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Wearable wireless real-time cerebral oximeter for measuring regional cerebral oxygen saturation

Si, Juanning; Zhang, Xin; Li, Meng; Yu, Jian; Zhang, Zhiyong; He, Qing; Chen, Shaohua; Zhu, Lianqing; Jiang, Tianzi
Sci China Inf Sci, 2021, 64(1): 112203

Keywords: near-infrared spectroscopy; cerebral oxygen saturation; oximeter; rso2; wearable

Cite as: Si J N, Zhang X, Li M, et al. Wearable wireless real-time cerebral oximeter for measuring regional cerebral oxygen saturation. Sci China Inf Sci, 2021, 64(1): 112203, doi: 10.1007/s11432-020-2995-5

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Performance analysis of fuzzy BLS using different cluster methods for classification

Feng, Shuang; Chen, C. L. Philip
Sci China Inf Sci, 2021, 64(4): 149205

Keywords: fuzzy broad learning system; clustering; fuzzy c-means; classification; tsk fuzzy system

Cite as: Feng S, Chen C L P. Performance analysis of fuzzy BLS using different cluster methods for classification. Sci China Inf Sci, 2021, 64(4): 149205, doi: 10.1007/s11432-018-9630-0

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A review of system modeling, assessment and operational optimization for integrated energy systems

Zhao, Jun; Chen, Long; Wang, Yinan; Liu, Quanli
Sci China Inf Sci, 2021, 64(9): 191201

Keywords: ies; system modeling; assessment; operational optimization; data-driven

Cite as: Zhao J, Chen L, Wang Y N, et al. A review of system modeling, assessment and operational optimization for integrated energy systems. Sci China Inf Sci, 2021, 64(9): 191201, doi: 10.1007/s11432-020-3176-x

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Finite-time command filtered adaptive control for nonlinear systems via immersion and invariance

Yu, Jinpeng; Shi, Peng; Chen, Xinkai; Cui, Guozeng
Sci China Inf Sci, 2021, 64(9): 192202

Keywords: adaptive control; finite-time control; command-filtered backstepping; immersion and invariance

Cite as: Yu J P, Shi P, Chen X K, et al. Finite-time command filtered adaptive control for nonlinear systems via immersion and invariance. Sci China Inf Sci, 2021, 64(9): 192202, doi: 10.1007/s11432-020-3144-6

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Modeling for coke quality prediction using Gaussian function and SGA

Yuan, Yan; Qu, Qilin; Cao, Weihua; Wu, Min
Sci China Inf Sci, 2022, 65(1): 119202

Keywords: coke quality; gaussian function; prediction model; selection gene algorithm; vitrinite reflectance

Cite as: Yuan Y, Qu Q L, Cao W H, et al. Modeling for coke quality prediction using Gaussian function and SGA. Sci China Inf Sci, 2022, 65(1): 119202, doi: 10.1007/s11432-019-2640-y

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Target tracking algorithm based on a broad learning system

Zhang, Dan; Li, Tieshan; Chen, C. L. Philip; Yang, He
Sci China Inf Sci, 2022, 65(5): 154201

Keywords: target tracking; broad learning system; selective search algorithm; multi-cue tracking; tracking adaptability

Cite as: Zhang D, Li T S, Chen C L P, et al. Target tracking algorithm based on a broad learning system. Sci China Inf Sci, 2022, 65(5): 154201, doi: 10.1007/s11432-020-3272-y

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A multi-mode multi-skill project scheduling reformulation for reconnaissance mission planning

Cai, Junqi; Peng, Zhihong; Liao, Sijian; Ding, Shuxin

Sci China Inf Sci, 2022, 65(6): 169201

Keywords: reconnaissance; rcpsp; multi-mode; multi-skill; scheduling; multi-agent system

Cite as: Cai J Q, Peng Z H, Liao S J, et al. A multi-mode multi-skill project scheduling reformulation for reconnaissance mission planning. Sci China Inf Sci, 2022, 65(6): 169201, doi: 10.1007/s11432-020-2990-y

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Car-following behavior modeling driven by small data sets based on mnemonic extreme gradient boosting framework

Lou, Baichuan; Li, Yufang; Lu, Xiaoding; Xu, Zhe

Sci China Inf Sci, 2022, 65(6): 169203

Keywords: car-following model; sparse data learning; xgboost; lstm; dynamic constraints

Cite as: Lou B C, Li Y F, Lu X D, et al. Car-following behavior modeling driven by small data sets based on mnemonic extreme gradient boosting framework. Sci China Inf Sci, 2022, 65(6): 169203, doi: 10.1007/s11432-020-3044-6

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Learning ultrasound scanning skills from human demonstrations

Deng, Xutian; Lei, Ziwei; Wang, Yi; Cheng, Wen; Guo, Zhao; Yang, Chenguang; Li, Miao

Sci China Inf Sci, 2022, 65(8): 184201

Keywords: robotic ultrasound; robotic skill learning; learning from demonstration; force control; compliant manipulation

Cite as: Deng X T, Lei Z W, Wang Y, et al. Learning ultrasound scanning skills from human demonstrations. Sci China Inf Sci, 2022, 65(8): 184201, doi: 10.1007/s11432-021-3363-0

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Adaptive synchronization control of uncertain multiple USVs with prescribed performance and preserved connectivity

He, Shude; Dai, Shilu; Dong, Chao

Sci China Inf Sci, 2022, 65(9): 199201

Keywords: synchronization tracking control; unmanned surface vehicles; connectivity preservation; prescribed performance; adaptive control

Cite as: He S D, Dai S L, Dong C. Adaptive synchronization control of uncertain multiple USVs with prescribed performance and preserved connectivity. Sci China Inf Sci, 2022, 65(9): 199201, doi: 10.1007/s11432-020-3174-7

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Broad learning system based on the quantized minimum error entropy criterion

Zhang, Simin; Liu, Zhulin; Chen, C. L. Philip

Sci China Inf Sci, 2022, 65(12): 222203

Keywords: broad learning system; quantized minimum error entropy; robustness; minimum error entropy; convergence

Cite as: Zhang S M, Liu Z L, Chen C L P. Broad learning system based on the quantized minimum error entropy criterion. Sci China Inf Sci, 2022, 65(12): 222203, doi: 10.1007/s11432-022-3560-8

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Prior area searching for energy-based sound source localization

Gao, Feng; Cai, Yeyun; Deng, Fang; Yu, Chengpu; Chen, Jie

Sci China Inf Sci, 2022, 65(12): 222204

Keywords: prior area searching; sound source localization; adaptively initialization; iterative search; indoor environment

Cite as: Gao F, Cai Y Y, Deng F, et al. Prior area searching for energy-based sound source localization. Sci China Inf Sci, 2022, 65(12): 222204, doi:

10.1007/s11432-022-3568-2

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Asymptotic multistability and local S-asymptotic ω -periodicity for the nonautonomous fractional-order neural networks with impulses

Kao, Yonggui; Li, Hui

Sci China Inf Sci, 2021, 64(1): 112207

Keywords: fractional-order neural networks; local s-asymptotic omega-periodicity; asymptotic multistability; impulse; nonautonomous

Cite as: Kao Y G, Li H. Asymptotic multistability and local S-asymptotic ω -periodicity for the nonautonomous fractional-order neural networks with impulses.

Sci China Inf Sci, 2021, 64(1): 112207, doi: 10.1007/s11432-019-2821-x

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A novel opinion model for complex macro-behaviors of mass opinion

Xing, Yu; Hong, Yiguang; Fang, Haitao

Sci China Inf Sci, 2021, 64(2): 129205

Keywords: social networks; opinion dynamics; degroot model; friedkin-johnson model; mass opinion; macro-behavior

Cite as: Xing Y, Hong Y G, Fang H T. A novel opinion model for complex macro-behaviors of mass opinion. Sci China Inf Sci, 2021, 64(2): 129205, doi:

10.1007/s11432-018-9616-x

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Final size of network epidemic models: properties and connections

Wang, Yi; Cao, Jinde

Sci China Inf Sci, 2021, 64(7): 179201

Keywords: epidemic models; complex networks; final size; degree distribution; control effort

Cite as: Wang Y, Cao J D. Final size of network epidemic models: properties and connections. Sci China Inf Sci, 2021, 64(7): 179201, doi: 10.1007/s11432-019-

2656-2

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Quasi-synchronization of bounded confidence opinion dynamics with a stochastic asynchronous rule

Su, Wei; Wang, Xue-Qiao; Chen, Ge; Shen, Kai

Sci China Inf Sci, 2022, 65(1): 119203

Keywords: opinion dynamics; multi-agent systems; social network; complex network; stochastic systems; swarm intelligence

Cite as: Su W, Wang X-Q, Chen G, et al. Quasi-synchronization of bounded confidence opinion dynamics with a stochastic asynchronous rule. Sci China Inf Sci,

2022, 65(1): 119203, doi: 10.1007/s11432-020-2950-x

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Social conformity creates consensus and strong diversity of Hegselmann-Krause opinion dynamics

Cheng, Chun; Yu, Changbin

Sci China Inf Sci, 2022, 65(2): 129202

Keywords: opinion dynamics; hegselmann-krause model; social network; conformity; multi-agent systems

Cite as: Cheng C, Yu C B. Social conformity creates consensus and strong diversity of Hegselmann-Krause opinion dynamics. *Sci China Inf Sci*, 2022, 65(2): 129202, doi: 10.1007/s11432-019-2788-5

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Stabilization of Boolean control networks with state-triggered impulses

Zhou, Rongpei; Guo, Yuqian; Liu, Xinzhi; Gui, Weihua

Sci China Inf Sci, 2022, 65(3): 132202

Keywords: boolean control networks; set stabilization; state-triggered impulses; hybrid-index model; semi-tensor product of matrices

Cite as: Zhou R P, Guo Y Q, Liu X Z, et al. Stabilization of Boolean control networks with state-triggered impulses. *Sci China Inf Sci*, 2022, 65(3): 132202, doi: 10.1007/s11432-020-3136-3

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Finite-horizon resilient state estimation for complex networks with integral measurements from partial nodes

Hou, Nan; Li, Jiahui; Liu, Hongjian; Ge, Yuan; Dong, Hongli

Sci China Inf Sci, 2022, 65(3): 132205

Keywords: complex networks; finite-horizon h_∞ partial-nodes-based state estimation; gain variations; backward recursive riccati difference equations; integral measurements

Cite as: Hou N, Li J H, Liu H J, et al. Finite-horizon resilient state estimation for complex networks with integral measurements from partial nodes. *Sci China Inf Sci*, 2022, 65(3): 132205, doi: 10.1007/s11432-020-3243-7

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Minimal observability of Boolean networks

Liu, Yang; Zhong, Jie; Ho, Daniel W. C.; Gui, Weihua

Sci China Inf Sci, 2022, 65(5): 152203

Keywords: boolean networks; minimal observability; semi-tensor product

Cite as: Liu Y, Zhong J, Ho D W C, et al. Minimal observability of Boolean networks. *Sci China Inf Sci*, 2022, 65(5): 152203, doi: 10.1007/s11432-021-3365-2

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The impact of information dissemination on vaccination in multiplex networks

Li, Xiao-Jie; Li, Cong; Li, Xiang

Sci China Inf Sci, 2022, 65(7): 172202

Keywords: evolutionary game theory; epidemic modeling; network dynamics

Cite as: Li X-J, Li C, Li X. The impact of information dissemination on vaccination in multiplex networks. *Sci China Inf Sci*, 2022, 65(7): 172202, doi: 10.1007/s11432-020-3076-1

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Complex network approach for the evaluation of asphalt pavement design and construction: a longitudinal study

Liu, Hanjie; Cao, Jinde; Huang, Wei; Shi, Xinli; Wang, Xudong

Sci China Inf Sci, 2022, 65(7): 172204

Keywords: complex network; asphalt pavement; structure evaluation; longitudinal; RIOHTrack

Cite as: Liu H J, Cao J D, Huang W, et al. Complex network approach for the evaluation of asphalt pavement design and construction: a longitudinal study. *Sci China Inf Sci*, 2022, 65(7): 172204, doi: 10.1007/s11432-021-3476-9

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Distributed energy trading with transmission cost: a Stackelberg game approach

Zhang, Xiaoyan; Zhu, Shanying

Sci China Inf Sci, 2021, 64(2): 129201

Keywords: smart grid; energy trading; transmission loss; stackelberg game; best response

Cite as: Zhang X Y, Zhu S Y. Distributed energy trading with transmission cost: a Stackelberg game approach. Sci China Inf Sci, 2021, 64(2): 129201, doi:

10.1007/s11432-018-9612-9

Special Focus on Cyber-Physical Systems

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Advanced virtual prototyping for cyber-physical systems using RISC-V: implementation, verification and challenges

Herdt, Vladimir; Drechsler, Rolf

Sci China Inf Sci, 2022, 65(1): 110201

Keywords: virtual prototyping; risc-v; systemc tlm; verification

Cite as: Herdt V, Drechsler R. Advanced virtual prototyping for cyber-physical systems using RISC-V: implementation, verification and challenges. Sci China Inf

Sci, 2022, 65(1): 110201, doi: 10.1007/s11432-020-3308-4

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Distributed fixed step-size algorithm for dynamic economic dispatch with power flow limits

Wang, Kun; Fu, Zao; Xu, Qian; Chen, Duxin; Wang, Lei; Yu, Wenwu

Sci China Inf Sci, 2021, 64(1): 112202

Keywords: dynamic economic dispatch; distributed optimization; discrete-time algorithm; active power flow limit; transmission line loss

Cite as: Wang K, Fu Z, Xu Q, et al. Distributed fixed step-size algorithm for dynamic economic dispatch with power flow limits. Sci China Inf Sci, 2021, 64(1):

112202, doi: 10.1007/s11432-019-2638-2

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Multi-objective energy management for PHEV using Pontryagin's minimum principle and particle swarm optimization online

Wang, Yuying; Jiao, Xiaohong

Sci China Inf Sci, 2021, 64(1): 119204

Keywords: plug-in hybrid electric vehicle; energy management strategy; multi-objective; pontryagin's minimum principle; particle swarm optimization

Cite as: Wang Y Y, Jiao X H. Multi-objective energy management for PHEV using Pontryagin's minimum principle and particle swarm optimization online. Sci

China Inf Sci, 2021, 64(1): 119204, doi: 10.1007/s11432-018-9595-3

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Observer-based self-triggered control for time-varying formation of multi-agent systems

Chai, Xiaofeng; Liu, Jian; Yu, Yao; Sun, Changyin

Sci China Inf Sci, 2021, 64(3): 132205

Keywords: multi-agent systems; time-varying formation; states observer; event-triggered

Cite as: Chai X F, Liu J, Yu Y, et al. Observer-based self-triggered control for time-varying formation of multi-agent systems. Sci China Inf Sci, 2021, 64(3):

132205, doi: 10.1007/s11432-019-2815-7

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The greedy crowd and smart leaders: a hierarchical strategy selection game with learning protocol

Guo, Linghui; Liu, Zhongxin; Chen, Zengqiang

Sci China Inf Sci, 2021, 64(3): 132206

Keywords: multi-agent system; reinforcement learning; game theory; complex network; bipartite graph

Cite as: Guo L H, Liu Z X, Chen Z Q. The greedy crowd and smart leaders: a hierarchical strategy selection game with learning protocol. Sci China Inf Sci, 2021, 64(3): 132206, doi: 10.1007/s11432-019-2825-y

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Quantum beetle antennae search: a novel technique for the constrained portfolio optimization problem

Khan, Ameer Tamoor; Cao, Xinwei; Li, Shuai; Hu, Bin; Katsikis, Vasilios N.

Sci China Inf Sci, 2021, 64(5): 152204

Keywords: quantum computing; beetle antennae search; portfolio selection; optimization; finance problem

Cite as: Khan A T, Cao X W, Li S, et al. Quantum beetle antennae search: a novel technique for the constrained portfolio optimization problem. Sci China Inf Sci, 2021, 64(5): 152204, doi: 10.1007/s11432-020-2894-9

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Finite-time distributed projection scheme for intersections of convex sets

Yang, Zhengquan; Zhang, Qing; Chen, Zengqiang

Sci China Inf Sci, 2021, 64(9): 199203

Keywords: multi-agent systems; intersections of convex sets; distributed optimization; finite-time; consensus

Cite as: Yang Z Q, Zhang Q, Chen Z Q. Finite-time distributed projection scheme for intersections of convex sets. Sci China Inf Sci, 2021, 64(9): 199203, doi: 10.1007/s11432-018-9853-9

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Interactive multiobjective evolutionary algorithm based on decomposition and compression

Chen, Lu; Xin, Bin; Chen, Jie

Sci China Inf Sci, 2021, 64(10): 202201

Keywords: multiobjective optimization; interactive decision making; preference incorporation; decomposition; compression

Cite as: Chen L, Xin B, Chen J. Interactive multiobjective evolutionary algorithm based on decomposition and compression. Sci China Inf Sci, 2021, 64(10): 202201, doi: 10.1007/s11432-020-3092-y

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Distributed optimal consensus of second-order multi-agent systems

Sun, Hui; Liu, Yungang; Li, Fengzhong

Sci China Inf Sci, 2021, 64(10): 209201

Keywords: multi-agent systems; leader-following; consensus; global optimization; distributed optimal protocol

Cite as: Sun H, Liu Y G, Li F Z. Distributed optimal consensus of second-order multi-agent systems. Sci China Inf Sci, 2021, 64(10): 209201, doi: 10.1007/s11432-018-9879-3

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Nonlinear output-feedback tracking in multiagent systems with an unknown leader and directed communication

Wang, Xinghu; Su, Youfeng; Xu, Dabo

Sci China Inf Sci, 2021, 64(12): 222202

Keywords: multiagent systems; internal model; unknown leaders; output regulation; output-feedback

Cite as: Wang X H, Su Y F, Xu D B. Nonlinear output-feedback tracking in multiagent systems with an unknown leader and directed communication. Sci China Inf Sci, 2021, 64(12): 222202, doi: 10.1007/s11432-020-3108-6

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Distributed convex optimization for nonlinear multi-agent systems disturbed by a second-order stationary process over a digraph

Wang, Dong; Wang, Zhu; Wu, Zhaojing; Wang, Wei

Sci China Inf Sci, 2022, 65(3): 132201

Keywords: distributed optimization; random differential equations; stationary process; noise-to-state exponential stability

Cite as: Wang D, Wang Z, Wu Z J, et al. Distributed convex optimization for nonlinear multi-agent systems disturbed by a second-order stationary process over a digraph. Sci China Inf Sci, 2022, 65(3): 132201, doi: 10.1007/s11432-020-3111-4

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Randomized difference-based gradient-free algorithm for distributed resource allocation

Geng, Xiaoxue; Zhao, Wenxiao

Sci China Inf Sci, 2022, 65(4): 142205

Keywords: resource allocation; distributed algorithm; randomized difference

Cite as: Geng X X, Zhao W X. Randomized difference-based gradient-free algorithm for distributed resource allocation. Sci China Inf Sci, 2022, 65(4): 142205, doi: 10.1007/s11432-020-3147-2

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Stabilization of a class of congestion games via intermittent control

Jiang, Kaichen; Wang, Jinhuan

Sci China Inf Sci, 2022, 65(4): 149203

Keywords: semi-tensor product of matrices; weighted congestion game; evolutionary dynamics; intermittent control; nash equilibrium

Cite as: Jiang K C, Wang J H. Stabilization of a class of congestion games via intermittent control. Sci China Inf Sci, 2022, 65(4): 149203, doi: 10.1007/s11432-019-3042-4

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Achieving geometric convergence for distributed optimization with Barzilai-Borwein step sizes

Gao, Juan; Liu, Xin-Wei; Dai, Yu-Hong; Huang, Yakui; Yang, Peng

Sci China Inf Sci, 2022, 65(4): 149204

Keywords: distributed optimization; multi-agent network; barzilai-borwein step sizes; optimization algorithms; convergence rate

Cite as: Gao J, Liu X-W, Dai Y-H, et al. Achieving geometric convergence for distributed optimization with Barzilai-Borwein step sizes. Sci China Inf Sci, 2022, 65(4): 149204, doi: 10.1007/s11432-020-3256-x

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Small-signal stability and robustness analysis for microgrids under time-constrained DoS attacks and a mitigation adaptive secondary control method

Sun, Qiuye; Wang, Bingyu; Feng, Xiaomeng; Hu, Shiyan

Sci China Inf Sci, 2022, 65(6): 162202

Keywords: microgrid; hierarchical control architecture; cyber-physical system security; denial-of-service attack; adaptive secondary frequency control

Cite as: Sun Q Y, Wang B Y, Feng X M, et al. Small-signal stability and robustness analysis for microgrids under time-constrained DoS attacks and a mitigation adaptive secondary control method. Sci China Inf Sci, 2022, 65(6): 162202, doi: 10.1007/s11432-021-3290-3

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Is fully distributed adaptive protocol applicable to graphs containing a directed spanning tree?

Lv, Yuezhu; Li, Zhongkui

Sci China Inf Sci, 2022, 65(8): 189203

Keywords: multi-agent system; consensus; fully distributed adaptive protocol; directed spanning tree; robust protocol design

Cite as: Lv Y Z, Li Z K. Is fully distributed adaptive protocol applicable to graphs containing a directed spanning tree?. Sci China Inf Sci, 2022, 65(8): 189203, doi: 10.1007/s11432-020-3129-1

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Observer-based distributed consensus for nonlinear multi-agent systems with limited data rate

Zhang, Jing; Liu, Shuai; Zhang, Xianfu

Sci China Inf Sci, 2022, 65(9): 192204

Keywords: nonlinear multi-agent systems; uniform quantizer; logarithmic quantizer; dynamic gain; δ -asymptotic distributed consensus

Cite as: Zhang J, Liu S, Zhang X F. Observer-based distributed consensus for nonlinear multi-agent systems with limited data rate. Sci China Inf Sci, 2022, 65(9): 192204, doi: 10.1007/s11432-020-3239-2

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Multi-objective optimization for 10-kW rated power dynamic wireless charging systems of electric vehicles

Zhou, Ze; Liu, Zhitao; Su, Hongye; Zhang, Liyan

Sci China Inf Sci, 2022, 65(10): 202201

Keywords: dynamic wireless charging; electric vehicles; multi-objective optimization; constrained adaptive particle swarm optimization

Cite as: Zhou Z, Liu Z T, Su H Y, et al. Multi-objective optimization for 10-kW rated power dynamic wireless charging systems of electric vehicles. Sci China Inf Sci, 2022, 65(10): 202201, doi: 10.1007/s11432-020-3255-5

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Distributed quantized mirror descent for strongly convex optimization over time-varying directed graph

Xiong, Menghui; Zhang, Baoyong; Yuan, Deming; Xu, Shengyuan

Sci China Inf Sci, 2022, 65(10): 202202

Keywords: distributed convex optimization; strongly convex optimization; mirror descent; quantized communication; Bregman divergence

Cite as: Xiong M H, Zhang B Y, Yuan D M, et al. Distributed quantized mirror descent for strongly convex optimization over time-varying directed graph. Sci China Inf Sci, 2022, 65(10): 202202, doi: 10.1007/s11432-020-3275-3

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Distributed optimization with Markovian switching targets and stochastic observation noises with applications to DC microgrids

Xie, Siyu; Wang, Leyi; Nazari, Masoud H.; Yin, George; Li, Gun

Sci China Inf Sci, 2022, 65(12): 222205

Keywords: constraint optimization; noisy observation; output variation; Markovian switching target; distributed algorithm; DC microgrid

Cite as: Xie S Y, Wang L Y, Nazari M H, et al. Distributed optimization with Markovian switching targets and stochastic observation noises with applications to DC microgrids. Sci China Inf Sci, 2022, 65(12): 222205, doi: 10.1007/s11432-022-3582-5

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Online remaining-useful-life estimation with a Bayesian-updated expectation-conditional-maximization algorithm and a modified Bayesian-model-averaging method

Yu, Yong; Si, Xiaosheng; Hu, Changhua; Zheng, Jianfei; Zhang, Jianxun

Sci China Inf Sci, 2021, 64(1): 112205

Keywords: online rul estimation; parameter uncertainty; model uncertainty; bayesian method; ecm algorithm; bayesian model averaging

Cite as: Yu Y, Si X S, Hu C H, et al. Online remaining-useful-life estimation with a Bayesian-updated expectation-conditional-maximization algorithm and a modified Bayesian-model-averaging method. *Sci China Inf Sci*, 2021, 64(1): 112205, doi: 10.1007/s11432-019-2724-5

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Fault diagnosis of high-speed train bogie based on LSTM neural network

Huang, Deqing; Fu, Yuanzhe; Qin, Na; Gao, Shibin

Sci China Inf Sci, 2021, 64(1): 119203

Keywords: high-speed train; bogie; long-short-term memory; lstm; fault diagnosis; recurrent neural network; rnn

Cite as: Huang D Q, Fu Y Z, Qin N, et al. Fault diagnosis of high-speed train bogie based on LSTM neural network. *Sci China Inf Sci*, 2021, 64(1): 119203, doi: 10.1007/s11432-018-9543-8

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Improved sparse representation based on local preserving projection for the fault diagnosis of multivariable system

Tang, Qiu; Li, Benqi; Chai, Yi; Qu, Jianfeng; Ren, Hao

Sci China Inf Sci, 2021, 64(2): 129204

Keywords: sparse representation; dictionary learning; local preserving projection; fault diagnosis; multivariable system

Cite as: Tang Q, Li B Q, Chai Y, et al. Improved sparse representation based on local preserving projection for the fault diagnosis of multivariable system. *Sci China Inf Sci*, 2021, 64(2): 129204, doi: 10.1007/s11432-018-9613-2

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Fault detection for a class of linear systems with integral measurements

Zhu, Xiaoqiang; Liu, Yang; Fang, Jingzhong; Zhong, Maiying

Sci China Inf Sci, 2021, 64(3): 132207

Keywords: fault detection; linear discrete-time systems; integral measurements; parity space; optimization problem

Cite as: Zhu X Q, Liu Y, Fang J Z, et al. Fault detection for a class of linear systems with integral measurements. *Sci China Inf Sci*, 2021, 64(3): 132207, doi: 10.1007/s11432-019-2944-3

[故障诊断与控制系统安全](#) [LETTER](#) [Website](#) [SpringerLink](#) [Google Scholar](#) [Supplementary](#)

Fault diagnosis of industrial process based on the optimal parametric t-distributed stochastic neighbor embedding

Jia, Ruixue; Wang, Jing; Zhou, Jinglin

Sci China Inf Sci, 2021, 64(5): 159204

Keywords: industrial process; fault classification; parametric t-sne; nonlinear dimension reduction; fault diagnosis

Cite as: Jia R X, Wang J, Zhou J L. Fault diagnosis of industrial process based on the optimal parametric t-distributed stochastic neighbor embedding. *Sci China Inf Sci*, 2021, 64(5): 159204, doi: 10.1007/s11432-018-9807-7

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Event trigger-based adaptive sliding mode fault-tolerant control for dynamic systems

Guo, Bin; Chen, Yong; Zhou, Anjian

Sci China Inf Sci, 2021, 64(6): 169205

Keywords: actuator fault; fault-tolerant control; event-triggered control; sliding mode control; composite observer

Cite as: Guo B, Chen Y, Zhou A J. Event trigger-based adaptive sliding mode fault-tolerant control for dynamic systems. *Sci China Inf Sci*, 2021, 64(6): 169205, doi: 10.1007/s11432-019-2681-1

[故障诊断与控制系统安全](#) [REVIEW](#) [Website](#) [SpringerLink](#) [Google Scholar](#)

Stochastic process-based degradation modeling and RUL prediction: from Brownian motion to fractional Brownian motion

Zhang, Hanwen; Chen, Maoyin; Shang, Jun; Yang, Chunjie; Sun, Youxian

Sci China Inf Sci, 2021, 64(7): 171201

Keywords: remaining useful life; degradation model; brownian motion; fractional brownian motion; long-range dependence

Cite as: Zhang H W, Chen M Y, Shang J, et al. Stochastic process-based degradation modeling and RUL prediction: from Brownian motion to fractional Brownian motion. Sci China Inf Sci, 2021, 64(7): 171201, doi: 10.1007/s11432-020-3134-8

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Bumpless transfer fault detection for switched systems: a state-dependent switching approach

Zong, Guangdeng; Huang, Chunxiao; Yang, Dong

Sci China Inf Sci, 2021, 64(7): 172208

Keywords: bumpless transfer; fault detection; multiple lyapunov functions; state-dependent switching law; switched systems

Cite as: Zong G D, Huang C X, Yang D. Bumpless transfer fault detection for switched systems: a state-dependent switching approach. Sci China Inf Sci, 2021, 64(7): 172208, doi: 10.1007/s11432-020-3036-9

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New health-state assessment model based on belief rule base with interpretability

Zhou, Zhijie; Cao, You; Hu, Guanyu; Zhang, Youmin; Tang, Shuaiwen; Chen, Yuan

Sci China Inf Sci, 2021, 64(7): 172214

Keywords: health-state assessment; belief rule base; interpretability; complex systems

Cite as: Zhou Z J, Cao Y, Hu G Y, et al. New health-state assessment model based on belief rule base with interpretability. Sci China Inf Sci, 2021, 64(7): 172214, doi: 10.1007/s11432-020-3001-7

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Privacy security in control systems

Zhang, Jifeng; Tan, Jianwei; Wang, Jimin

Sci China Inf Sci, 2021, 64(7): 176201

Keywords: privacy security; control systems; privacy preserving; privacy security in control systems; reliability

Cite as: Zhang J F, Tan J W, Wang J M. Privacy security in control systems. Sci China Inf Sci, 2021, 64(7): 176201, doi: 10.1007/s11432-020-3240-8

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A joint order-replacement policy for deteriorating components with reliability constraint

Si, Xiaosheng; Hu, Changhua; Li, Tianmei; Zhang, Qi

Sci China Inf Sci, 2021, 64(8): 189203

Keywords: prognostics; remaining useful life; replacement; spare part ordering; degradation model

Cite as: Si X S, Hu C H, Li T M, et al. A joint order-replacement policy for deteriorating components with reliability constraint. Sci China Inf Sci, 2021, 64(8): 189203, doi: 10.1007/s11432-018-9804-9

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A novel kind of sufficient conditions for safety judgement based on control barrier function

Zhu, Zheren; Chai, Yi; Yang, Zhimin

Sci China Inf Sci, 2021, 64(9): 199205

Keywords: safety criterion; control barrier function; fault safety; complex system; sufficient condition

Cite as: Zhu Z R, Chai Y, Yang Z M. A novel kind of sufficient conditions for safety judgement based on control barrier function. Sci China Inf Sci, 2021, 64(9): 199205, doi: 10.1007/s11432-018-9840-6

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A Bayesian belief-rule-based inference multivariate alarm system for nonlinear time-varying processes

Xu, Xiaobin; Yu, Zhuochen; Zeng, Jiusun; Xiong, Wanqi; Hu, Yanzhu; Wang, Guodong

Sci China Inf Sci, 2021, 64(10): 202203

Keywords: multivariate alarm design; belief-rule-based method; nonlinear time-varying process; sequential monte carlo

Cite as: Xu X B, Yu Z C, Zeng J S, et al. A Bayesian belief-rule-based inference multivariate alarm system for nonlinear time-varying processes. Sci China Inf Sci, 2021, 64(10): 202203, doi: 10.1007/s11432-020-3029-6

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Optimal replacement of degrading components: a control-limit policy

Si, Xiaosheng; Li, Tianmei; Zhang, Qi

Sci China Inf Sci, 2021, 64(10): 209205

Keywords: degradation; condition based maintenance; prognostics; life prediction; replacement

Cite as: Si X S, Li T M, Zhang Q. Optimal replacement of degrading components: a control-limit policy. Sci China Inf Sci, 2021, 64(10): 209205, doi: 10.1007/s11432-019-9949-6

Special Focus on Cyber-Physical Systems

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Label propagation dictionary learning based process monitoring method for industrial process with between-mode similarity

Huang, Keke; Tao, Shijun; Liu, Yishun; Yang, Chunhua; Gui, Weihua

Sci China Inf Sci, 2022, 65(1): 110203

Keywords: process monitoring; label propagation; dictionary learning; between-mode similarity; graph laplacian regularization

Cite as: Huang K K, Tao S J, Liu Y S, et al. Label propagation dictionary learning based process monitoring method for industrial process with between-mode similarity. Sci China Inf Sci, 2022, 65(1): 110203, doi: 10.1007/s11432-021-3341-y

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Safety criteria based on barrier function under the framework of boundedness for some dynamic systems

Zhu, Zheren; Chai, Yi; Yang, Zhimin; Huang, Chenghong

Sci China Inf Sci, 2022, 65(2): 122203

Keywords: safety criteria; barrier function; fault safety; multi-hypersphere method; dynamic system

Cite as: Zhu Z R, Chai Y, Yang Z M, et al. Safety criteria based on barrier function under the framework of boundedness for some dynamic systems. Sci China Inf Sci, 2022, 65(2): 122203, doi: 10.1007/s11432-020-3028-4

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Unknown-input-observer-based approach to dynamic event-triggered fault estimation for Markovian jump systems with time-varying delays

Du, Xiaoting; Zou, Lei; Zhao, Zhongyi; Wang, Yezheng; Zhong, Maiying

Sci China Inf Sci, 2022, 65(3): 132203

Keywords: fault estimation; unknown input observer; markovian jump systems; dynamic event-triggered mechanism; time-varying delays

Cite as: Du X T, Zou L, Zhao Z Y, et al. Unknown-input-observer-based approach to dynamic event-triggered fault estimation for Markovian jump systems with time-varying delays. Sci China Inf Sci, 2022, 65(3): 132203, doi: 10.1007/s11432-020-3178-3

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Resilient observer-based event-triggered control for cyber-physical systems under asynchronous denial-of-service attacks

Zhang, Yifang; Wu, Zhengguang; Wu, Zongze; Meng, Deyuan

Sci China Inf Sci, 2022, 65(4): 142203

Keywords: cyber-physical systems; input-to-state stability; asynchronous dos attacks; h_∞ observer; event-triggered control

Cite as: Zhang Y F, Wu Z G, Wu Z Z, et al. Resilient observer-based event-triggered control for cyber-physical systems under asynchronous denial-of-service attacks. Sci China Inf Sci, 2022, 65(4): 142203, doi: 10.1007/s11432-020-3190-2

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Industrial process fault detection based on locally linear embedded latent mapping

Li, Yuan; Feng, Chengcheng

Sci China Inf Sci, 2022, 65(4): 149201

Keywords: latent mapping; manifold learning; local linear embedding; te process; fault detection

Cite as: Li Y, Feng C C. Industrial process fault detection based on locally linear embedded latent mapping. Sci China Inf Sci, 2022, 65(4): 149201, doi: 10.1007/s11432-019-2896-x

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A new current sensor incipient fault diagnosis method for converters in wind energy conversion systems

Tao, Songbing; Hu, Youqiang; Xu, Shuiqing; Chai, Yi; Zhang, Ke

Sci China Inf Sci, 2022, 65(5): 159201

Keywords: incipient fault; current sensor; fault diagnosis; wind power; instantaneous amplitude; fault location

Cite as: Tao S B, Hu Y Q, Xu S Q, et al. A new current sensor incipient fault diagnosis method for converters in wind energy conversion systems. Sci China Inf Sci, 2022, 65(5): 159201, doi: 10.1007/s11432-020-2947-1

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A novel deep quality-supervised regularized autoencoder model for quality-relevant fault detection

Li, Zhichao; Tian, Li; Yan, Xuefeng

Sci China Inf Sci, 2022, 65(5): 159203

Keywords: supervised learning; deep learning; regularized autoencoder; process monitoring; quality-relevant fault detection

Cite as: Li Z C, Tian L, Yan X F. A novel deep quality-supervised regularized autoencoder model for quality-relevant fault detection. Sci China Inf Sci, 2022, 65(5): 159203, doi: 10.1007/s11432-020-2964-7

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Secure output synchronization of heterogeneous multi-agent systems against false data injection attacks

Huo, Shicheng; Huang, Dalin; Zhang, Ya

Sci China Inf Sci, 2022, 65(6): 162204

Keywords: output synchronization; false data injection attacks; adaptive compensators; heterogeneous multi-agent systems; secure control

Cite as: Huo S C, Huang D L, Zhang Y. Secure output synchronization of heterogeneous multi-agent systems against false data injection attacks. Sci China Inf Sci, 2022, 65(6): 162204, doi: 10.1007/s11432-020-3148-x

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Active event-driven reliable defense control for interconnected nonlinear systems under actuator faults and denial-of-service attacks

GUO, Bin; DIAN, Songyi; ZHAO, Tao

Sci China Inf Sci, 2022, 65(6): 162205

Keywords: interconnected nonlinear system; actuator fault; DoS attack; disturbance; fault-tolerant control; event-driven control

Cite as: Guo B, Dian S Y, Zhao T. Active event-driven reliable defense control for interconnected nonlinear systems under actuator faults and denial-of-service attacks. *Sci China Inf Sci*, 2022, 65(6): 162205, doi: 10.1007/s11432-021-3397-2

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Prognostics based on the generalized diffusion process with parameters updated by a sequential Bayesian method

Hong Pei; Si, Xiaosheng; Hu, Changhua; Zhang, Jianxun; Du, Dangbo; Pang, Zhenan; Zhang, Shengfei
Sci China Inf Sci, 2022, 65(6): 162206

Keywords: generalized diffusion process; stochastic model parameters; remaining useful life; maximum likelihood estimation; sequential Bayesian methods

Cite as: Pei H, Si X S, Hu C H, et al. Prognostics based on the generalized diffusion process with parameters updated by a sequential Bayesian method. *Sci China Inf Sci*, 2022, 65(6): 162206, doi: 10.1007/s11432-020-2980-9

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Fault estimation based on high order iterative learning scheme for systems subject to nonlinear uncertainties

Feng, Li; Xu, Shuiqing; Zhang, Ke; Chai, Yi; Huang, Darong
Sci China Inf Sci, 2022, 65(7): 179202

Keywords: fault estimation; high order iterative learning scheme; nonlinear system; nonlinear uncertainties; iterative learning control

Cite as: Feng L, Xu S Q, Zhang K, et al. Fault estimation based on high order iterative learning scheme for systems subject to nonlinear uncertainties. *Sci China Inf Sci*, 2022, 65(7): 179202, doi: 10.1007/s11432-020-3026-4

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Incipient fault diagnosis on active disturbance rejection control

Huang, Darong; Hua, Xingxing; Mi, Bo; Liu, Yang; Zhang, Zhenyuan
Sci China Inf Sci, 2022, 65(9): 199202

Keywords: active disturbance rejection control; fault diagnosis; disturbance; abrupt incipient fault; soft incipient fault

Cite as: Huang D R, Hua X X, Mi B, et al. Incipient fault diagnosis on active disturbance rejection control. *Sci China Inf Sci*, 2022, 65(9): 199202, doi: 10.1007/s11432-020-3154-5

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Slow state estimation for singularly perturbed systems with discrete measurements

Liu, Yunli; Chen, Wu-Hua; Lu, Xiaomei
Sci China Inf Sci, 2021, 64(2): 129202

Keywords: observer design; singularly perturbed systems; discrete measurements; slow manifold; reduced-order observer

Cite as: Liu Y L, Chen W-H, Lu X M. Slow state estimation for singularly perturbed systems with discrete measurements. *Sci China Inf Sci*, 2021, 64(2): 129202, doi: 10.1007/s11432-018-9657-3

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SVD based scale transform invariant observable degree for LTI system

Ge, Quanbo; Zhuo, Peng; He, Hongli; Hu, Zhentao; Duan, Zhansheng; Yu, Junzhi
Sci China Inf Sci, 2021, 64(3): 139205

Keywords: observability matrix; observable degree; singular value decomposition; scale transform invariance; linear system; linear relation

Cite as: Ge Q B, Zhuo P, He H L, et al. SVD based scale transform invariant observable degree for LTI system. Sci China Inf Sci, 2021, 64(3): 139205, doi: 10.1007/s11432-018-9886-8

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Stability of the distributed Kalman filter using general random coefficients

Gan, Die; Xie, Siyu; Liu, Zhixin

Sci China Inf Sci, 2021, 64(7): 172204

Keywords: distributed kalman filter; collective random observability; l-p-stable; l-p-exponentially stable; state estimation

Cite as: Gan D, Xie S Y, Liu Z X. Stability of the distributed Kalman filter using general random coefficients. Sci China Inf Sci, 2021, 64(7): 172204, doi: 10.1007/s11432-020-2962-9

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Recursive filtering for nonlinear systems subject to measurement outliers

Jiang, Bo; Gao, Hongyu; Han, Fei; Dong, Hongli

Sci China Inf Sci, 2021, 64(7): 172206

Keywords: adaptive saturation; measurement outliers; multiplicative noises; nonlinear systems; recursive filtering

Cite as: Jiang B, Gao H Y, Han F, et al. Recursive filtering for nonlinear systems subject to measurement outliers. Sci China Inf Sci, 2021, 64(7): 172206, doi: 10.1007/s11432-020-3135-y

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On-line quantum state estimation using continuous weak measurement and compressed sensing

Cong, Shuang; Tang, Yaru; Harraz, Sajede; Li, Kezhi; Yang, Jingbei

Sci China Inf Sci, 2021, 64(8): 189202

Keywords: state estimation; compressed sensing; open quantum systems; information process; continues weak measurement

Cite as: Cong S, Tang Y R, Harraz S, et al. On-line quantum state estimation using continuous weak measurement and compressed sensing. Sci China Inf Sci, 2021, 64(8): 189202, doi: 10.1007/s11432-018-9793-2

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Adaptive event-triggered state estimation for large-scale systems subject to deception attacks

Xiao, Hanchen; Ding, Derui; Dong, Hongli; Wei, Guoliang

Sci China Inf Sci, 2022, 65(2): 122207

Keywords: input-to-state stability; power systems large-scale discrete-time systems; adaptive event-triggering communication; deception attacks,

Cite as: Xiao H C, Ding D R, Dong H L, et al. Adaptive event-triggered state estimation for large-scale systems subject to deception attacks. Sci China Inf Sci, 2022, 65(2): 122207, doi: 10.1007/s11432-020-3142-5

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Active disturbance rejection control for fractional reaction-diffusion equations with spatially varying diffusivity and time delay

Cai, Rui-Yang; Zhou, Hua-Cheng; Kou, Chun-Hai

Sci China Inf Sci, 2022, 65(2): 129203

Keywords: boundary control; active disturbance rejection control; backstepping method; fractional; mittag-leffler stable

Cite as: Cai R-Y, Zhou H-C, Kou C-H. Active disturbance rejection control for fractional reaction-diffusion equations with spatially varying diffusivity and time delay. Sci China Inf Sci, 2022, 65(2): 129203, doi: 10.1007/s11432-019-2876-9

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An online quantum state filter with sparse disturbance and Gaussian noise

Wang, Tao; Cong, Shuang

Sci China Inf Sci, 2022, 65(6): 169204

Keywords: online quantum state filter; oqsf; online alternating direction method of multipliers; oadm; iterative shrinkage threshold algorithm; ista; sparse disturbance; gaussian noise

Cite as: Wang T, Cong S. An online quantum state filter with sparse disturbance and Gaussian noise. Sci China Inf Sci, 2022, 65(6): 169204, doi:

10.1007/s11432-021-3339-y

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Time-scheduled observer design for switched linear systems with unknown inputs

Shi, Shuang; Fei, Zhongyang; Zhao, Xudong

Sci China Inf Sci, 2022, 65(7): 179204

Keywords: switched linear systems; unknown inputs; admissible edge-dependent average dwell-time; multiple discontinuous lyapunov-like functions; observer design

Cite as: Shi S, Fei Z Y, Zhao X D. Time-scheduled observer design for switched linear systems with unknown inputs. Sci China Inf Sci, 2022, 65(7): 179204, doi:

10.1007/s11432-020-3143-7

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Estimation and compensation of periodic disturbance using internal-model-based equivalent-input-disturbance approach

Mei, Qicheng; She, Jinhua; Liu, Zhentao; Wu, Min

Sci China Inf Sci, 2022, 65(8): 182205

Keywords: equivalent input disturbance; EID; linear matrix inequality; LMI; linear quadratic regulator; LQR; particle swarm optimization; PSO; periodic disturbance; repetitive control

Cite as: Mei Q C, She J H, Liu Z T, et al. Estimation and compensation of periodic disturbance using internal-model-based equivalent-input-disturbance approach. Sci China Inf Sci, 2022, 65(8): 182205, doi: 10.1007/s11432-020-3192-5

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Multisensor fusion estimation of nonlinear systems with intermittent observations and heavy-tailed noises

Xiao, Bo; Wu, Q. M. Jonathan; Yan, Liping

Sci China Inf Sci, 2022, 65(9): 192203

Keywords: state fusion estimation; nonlinear systems; heavy-tailed noise; intermittent observations; multivariate t-distribution

Cite as: Xiao B, Wu Q M J, Yan L P. Multisensor fusion estimation of nonlinear systems with intermittent observations and heavy-tailed noises. Sci China Inf Sci, 2022, 65(9): 192203, doi: 10.1007/s11432-020-3223-6

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Reliable attitude estimation algorithm considering atypical observation

Guo, Xiao-Ting; Shen, Chong; Tang, Jun; Li, Jie; Liu, Jun

Sci China Inf Sci, 2022, 65(10): 209203

Keywords: attitude estimation; integrated system; ckf; vision atypical observations; narx

Cite as: Guo X-T, Shen C, Tang J, et al. Reliable attitude estimation algorithm considering atypical observation. Sci China Inf Sci, 2022, 65(10): 209203, doi:

10.1007/s11432-020-3093-5

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Homography-based camera pose estimation with known gravity direction for UAV navigation

Zhao, Chunhui; Fan, Bin; Hu, Jinwen; Pan, Quan; Xu, Zhao

Sci China Inf Sci, 2021, 64(1): 112204

Keywords: unmanned aerial vehicle; uav; pose estimation; homography; least-squares estimation

Cite as: Zhao C H, Fan B, Hu J W, et al. Homography-based camera pose estimation with known gravity direction for UAV navigation. *Sci China Inf Sci*, 2021, 64(1): 112204, doi: 10.1007/s11432-019-2690-0

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Angular velocity estimation using characteristics of star trails obtained by star sensor for spacecraft

Ning, Xiaolin; Chen, Pingping; Huang, Yueqing; Wu, Weiren; Fang, Jiancheng

Sci China Inf Sci, 2021, 64(1): 112209

Keywords: angular velocity estimation; star sensor; blurred star images; star trail characteristics; unscented kalman filter

Cite as: Ning X L, Chen P P, Huang Y Q, et al. Angular velocity estimation using characteristics of star trails obtained by star sensor for spacecraft. *Sci China Inf Sci*, 2021, 64(1): 112209, doi: 10.1007/s11432-019-2824-y

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Design of optimal trajectory transition controller for thrust-vectorred V/STOL aircraft

Cheng, Zhiqiang; Zhu, Jihong; Yuan, Xiaming; Wang, Xiangyang

Sci China Inf Sci, 2021, 64(3): 139201

Keywords: optimal trajectory; thrust-vector; transition control; v/stol; backward propagation

Cite as: Cheng Z Q, Zhu J H, Yuan X M, et al. Design of optimal trajectory transition controller for thrust-vectorred V/STOL aircraft. *Sci China Inf Sci*, 2021, 64(3): 139201, doi: 10.1007/s11432-018-9582-6

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A novel adaptive pigeon-inspired optimization algorithm based on evolutionary game theory

Hai, Xingshuo; Wang, Zili; Feng, Qiang; Ren, Yi; Sun, Bo; Yang, Dezhen

Sci China Inf Sci, 2021, 64(3): 139203

Keywords: pigeon-inspired optimization; global continuous optimization problems; evolutionary game theory; adaptability; local optimum

Cite as: Hai X S, Wang Z L, Feng Q, et al. A novel adaptive pigeon-inspired optimization algorithm based on evolutionary game theory. *Sci China Inf Sci*, 2021, 64(3): 139203, doi: 10.1007/s11432-018-9923-6

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Cooperative prediction guidance law in target-attacker-defender scenario

Shi, Heng; Zhu, Jihong; Kuang, Minchi; Yuan, Xiaming

Sci China Inf Sci, 2021, 64(4): 149201

Keywords: cooperative guidance; predictive guidance; target-attacker-defender scenario; missile guidance; aircraft active defense

Cite as: Shi H, Zhu J H, Kuang M C, et al. Cooperative prediction guidance law in target-attacker-defender scenario. *Sci China Inf Sci*, 2021, 64(4): 149201, doi: 10.1007/s11432-018-9806-7

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Parametric output regulation using observer-based PI controllers with applications in flexible spacecraft attitude control

Duan, Guangren; Zhao, Tianyi

Sci China Inf Sci, 2021, 64(7): 172210

Keywords: parametric control system design; multiobjective design; observer-based control; separation principle; pi regulator; constant signal tracking; disturbance decoupling and attenuation

Cite as: Duan G R, Zhao T Y. Parametric output regulation using observer-based PI controllers with applications in flexible spacecraft attitude control. *Sci China Inf Sci*, 2021, 64(7): 172210, doi: 10.1007/s11432-020-3078-1

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Surface-to-air missile sites detection agent with remote sensing images

Liu, Feng; Zhu, Jihong; Wang, Wufan; Kuang, Minchi

Sci China Inf Sci, 2021, 64(9): 194201

Keywords: surface to air missile sites; target detection; remote sensing images; area searching; deep learning

Cite as: Liu F, Zhu J H, Wang W F, et al. Surface-to-air missile sites detection agent with remote sensing images. Sci China Inf Sci, 2021, 64(9): 194201, doi: 10.1007/s11432-019-9920-2

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Minimal solution for estimating fundamental matrix under planar motion

Fu, Qiang; Mu, Xinxing; Wang, Yu

Sci China Inf Sci, 2021, 64(10): 209203

Keywords: fundamental matrix; minimal solution; planar motion; monocular vision; mobile robot

Cite as: Fu Q, Mu X X, Wang Y. Minimal solution for estimating fundamental matrix under planar motion. Sci China Inf Sci, 2021, 64(10): 209203, doi: 10.1007/s11432-019-9925-1

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Additive-state-decomposition-based station-keeping control for autonomous aerial refueling

Ren, Jinrui; Quan, Quan; Ma, Haibiao; Cai, Kai-Yuan

Sci China Inf Sci, 2021, 64(11): 219202

Keywords: aerial refueling; station keeping; two-degree-of-freedom; additive state decomposition; varying mass

Cite as: Ren J R, Quan Q, Ma H B, et al. Additive-state-decomposition-based station-keeping control for autonomous aerial refueling. Sci China Inf Sci, 2021, 64(11): 219202, doi: 10.1007/s11432-019-2814-x

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Distributed unmanned flocking inspired by the collective motion of pigeon flocks

Qiu, Huaxin; Zhou, Qingrui; Sun, Changhao; Wang, Xiaochu

Sci China Inf Sci, 2022, 65(4): 144201

Keywords: collective motion; distributed control; unmanned aerial vehicle; flocking control; swarm intelligence

Cite as: Qiu H X, Zhou Q R, Sun C H, et al. Distributed unmanned flocking inspired by the collective motion of pigeon flocks. Sci China Inf Sci, 2022, 65(4): 144201, doi: 10.1007/s11432-020-3222-2

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A two-level scheme for multiobjective multidebris active removal mission planning in low Earth orbits

Yang, Jianan; Hou, Xiaolei; Liu, Yong; Hu, Yuheng; Pan, Quan

Sci China Inf Sci, 2022, 65(5): 152201

Keywords: multidebris active removal; mission planning; multiobjective optimization; drift-orbit transfer strategy; rendezvous strategy

Cite as: Yang J N, Hou X L, Liu Y, et al. A two-level scheme for multiobjective multidebris active removal mission planning in low Earth orbits. Sci China Inf Sci, 2022, 65(5): 152201, doi: 10.1007/s11432-020-3049-5

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Pan-location mapping and localization for the in-situ science exploration of Zhurong Mars rover

Zeng, Xingguo; Liu, Jianjun; Ren, Xin; Yan, Wei; Fu, Qiang; Gao, Xingye; Chen, Wangli; Zuo, Wei; Li, Chunlai

Sci China Inf Sci, 2022, 65(7): 172201

Keywords: pan-location mapping; planetary exploration; geo-visualization; Tianwen-1 mission; Zhurong rover

Cite as: Zeng X G, Liu J J, Ren X, et al. Pan-location mapping and localization for the in-situ science exploration of Zhurong Mars rover. Sci China Inf Sci, 2022, 65(7): 172201, doi: 10.1007/s11432-021-3484-2

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Stability of networked control system subject to denial-of-service

Guo, Li; Cui, Tingting; Yu, Hao; Hao, Fei

Sci China Inf Sci, 2021, 64(2): 129203

Keywords: dos attacks; event-triggered control; linear systems; stochastic systems; discrete-time systems; networked control systems

Cite as: Guo L, Cui T T, Yu H, et al. Stability of networked control system subject to denial-of-service. Sci China Inf Sci, 2021, 64(2): 129203, doi: 10.1007/s11432-018-9583-2

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Distributed time-varying formation control with uncertainties based on an event-triggered mechanism

Li, Xiaoduo; Bai, Yumeng; Dong, Xiwang; Li, Qingdong; Ren, Zhang

Sci China Inf Sci, 2021, 64(3): 132204

Keywords: formation control; multi-agent systems; event-triggered; adaptive control

Cite as: Li X D, Bai Y M, Dong X W, et al. Distributed time-varying formation control with uncertainties based on an event-triggered mechanism. Sci China Inf Sci, 2021, 64(3): 132204, doi: 10.1007/s11432-019-2770-8

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Deep amended COPERT model for regional vehicle emission prediction

Xu, Zhenyi; Kang, Yu; Cao, Yang; Li, Zerui

Sci China Inf Sci, 2021, 64(3): 139202

Keywords: spatiotemporal network; deep learning; vehicle emission; prediction; model modification

Cite as: Xu Z Y, Kang Y, Cao Y, et al. Deep amended COPERT model for regional vehicle emission prediction. Sci China Inf Sci, 2021, 64(3): 139202, doi: 10.1007/s11432-018-9650-9

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Bipartite consensus problem on matrix-valued weighted directed networks

Pan, Lulu; Shao, Haibin; Xi, Yugeng; Li, Dewei

Sci China Inf Sci, 2021, 64(4): 149204

Keywords: consensus; multi-agent systems; bipartite consensus; antagonist interactions; networked systems

Cite as: Pan L L, Shao H B, Xi Y G, et al. Bipartite consensus problem on matrix-valued weighted directed networks. Sci China Inf Sci, 2021, 64(4): 149204, doi: 10.1007/s11432-018-9710-8

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A novel synthesis method for reliable feedback shift registers via Boolean networks

Lu, Jianquan; Li, Bowen; Zhong, Jie

Sci China Inf Sci, 2021, 64(5): 152207

Keywords: feedback shift register; boolean networks; semi-tensor product; global stability; monotonicity

Cite as: Lu J Q, Li B W, Zhong J. A novel synthesis method for reliable feedback shift registers via Boolean networks. Sci China Inf Sci, 2021, 64(5): 152207, doi: 10.1007/s11432-020-2981-4

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On dimensions of dimension-bounded linear systems

Zhao, Peixin; Guo, Hongfeng; Yu, Yongyuan; Feng, Jun-e

Sci China Inf Sci, 2021, 64(5): 159202

Keywords: cross-dimensional system; dimension-bounded system; vector product; invariant vector space; factorization

Cite as: Zhao P X, Guo H F, Yu Y Y, et al. On dimensions of dimension-bounded linear systems. Sci China Inf Sci, 2021, 64(5): 159202, doi: 10.1007/s11432-018-9819-8

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State-feedback set stabilization of logical control networks with state-dependent delay

Zheng, Yating; Li, Haitao; Feng, Jun-E

Sci China Inf Sci, 2021, 64(6): 169203

Keywords: control invariance; logical control networks; semi-tensor product of matrices; set stabilization; state-dependent delay

Cite as: Zheng Y T, Li H T, Feng J-E. State-feedback set stabilization of logical control networks with state-dependent delay. Sci China Inf Sci, 2021, 64(6): 169203, doi: 10.1007/s11432-019-9904-6

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Exponential stabilization of memristor-based neural networks with unbounded time-varying delays

Zhao, Jiemei

Sci China Inf Sci, 2021, 64(8): 189205

Keywords: memristor-based neural networks; exponential stabilization; discrete time delays; filippov solution; algebraic criterion

Cite as: Zhao J M. Exponential stabilization of memristor-based neural networks with unbounded time-varying delays. Sci China Inf Sci, 2021, 64(8): 189205, doi: 10.1007/s11432-018-9817-4

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Distributed multilane merging for connected autonomous vehicle platooning

Wu, Jingkai; Wang, Yafei; Shen, Zhaokun; Wang, Lin; Du, Haiping; Yin, Chengliang

Sci China Inf Sci, 2021, 64(11): 212202

Keywords: platoon; merging; connected autonomous vehicle; multiagent system; distributed controller

Cite as: Wu J K, Wang Y F, Shen Z K, et al. Distributed multilane merging for connected autonomous vehicle platooning. Sci China Inf Sci, 2021, 64(11): 212202, doi: 10.1007/s11432-020-3107-7

Special Focus on Cyber-Physical Systems

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Event-triggered robust MPC of nonlinear cyber-physical systems against DoS attacks

Sun, Qi; Chen, Jicheng; Shi, Yang

Sci China Inf Sci, 2022, 65(1): 110202

Keywords: cyber-physical systems; nonlinear model predictive control; event-triggered mechanism; robust control; denial-of-service attacks

Cite as: Sun Q, Chen J C, Shi Y. Event-triggered robust MPC of nonlinear cyber-physical systems against DoS attacks. Sci China Inf Sci, 2022, 65(1): 110202, doi: 10.1007/s11432-020-3289-1

Special Focus on Cyber-Physical Systems

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Wireless/wired integrated transmission for industrial cyber-physical systems: risk-sensitive co-design of 5G and TSN protocols

Zhang, Yajing; Xu, Qimin; Guan, Xinping; Chen, Cailian; Li, Mingyan

Sci China Inf Sci, 2022, 65(1): 110204

Keywords: industrial cyber-physical systems; icps; 5g-tsn co-design; wireless/wired integrated network; risk-sensitive reinforcement learning; deterministic communication

Cite as: Zhang Y J, Xu Q M, Guan X P, et al. Wireless/wired integrated transmission for industrial cyber-physical systems: risk-sensitive co-design of 5G and TSN protocols. Sci China Inf Sci, 2022, 65(1): 110204, doi: 10.1007/s11432-020-3344-8

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Equivalent input disturbance-based load frequency control for smart grid with air conditioning loads

Jin, Li; He, Yong; Zhang, Chuan-Ke; Shangguan, Xing-Chen; Jiang, Lin; Wu, Min

Sci China Inf Sci, 2022, 65(2): 122205

Keywords: conditioning loads equivalent input disturbance; load frequency control; parameter uncertainties; wind power; air

Cite as: Jin L, He Y, Zhang C-K, et al. Equivalent input disturbance-based load frequency control for smart grid with air conditioning loads. Sci China Inf Sci, 2022, 65(2): 122205, doi: 10.1007/s11432-020-3120-0

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Sufficient conditions and limitations of equivalent partition in multiagent controllability

Guo, Junhao; Ji, Zhijian; Liu, Yungang

Sci China Inf Sci, 2022, 65(3): 132204

Keywords: multiagent system; controllability; equivalent partition; tao's equation; graph theory

Cite as: Guo J H, Ji Z J, Liu Y G. Sufficient conditions and limitations of equivalent partition in multiagent controllability. Sci China Inf Sci, 2022, 65(3): 132204, doi: 10.1007/s11432-020-3159-9

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Constructibility of a causal/impulse free NDS using descriptor form subsystems

Zhou, Tong

Sci China Inf Sci, 2022, 65(4): 142204

Keywords: causality; descriptor system; impulse free; large scale system; networked dynamic system; singular system

Cite as: Zhou T. Constructibility of a causal/impulse free NDS using descriptor form subsystems. Sci China Inf Sci, 2022, 65(4): 142204, doi: 10.1007/s11432-020-3208-0

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Deep reinforcement learning for optimal denial-of-service attacks scheduling

Hou, Fangyuan; Sun, Jian; Yang, Qiuling; Pang, Zhonghua

Sci China Inf Sci, 2022, 65(6): 162201

Keywords: optimal denial-of-service attack; scheduling; optimization; limited energy; deep reinforcement learning

Cite as: Hou F Y, Sun J, Yang Q L, et al. Deep reinforcement learning for optimal denial-of-service attacks scheduling. Sci China Inf Sci, 2022, 65(6): 162201, doi: 10.1007/s11432-020-3027-0

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Event-based sliding mode control under denial-of-service attacks

Tian, Yingxin; Li, Xiang; Dong, Bo; Gao, Yabin; Wu, Ligang

Sci China Inf Sci, 2022, 65(6): 162203

Keywords: sliding mode control; time delay; uncertain system; state observer; event trigger

Cite as: Tian Y X, Li X, Dong B, et al. Event-based sliding mode control under denial-of-service attacks. Sci China Inf Sci, 2022, 65(6): 162203, doi: 10.1007/s11432-021-3375-5

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Consensus of switched multi-agent systems with binary-valued communications

Hu, Min; Wang, Ting; Zhao, Yanlong

Sci China Inf Sci, 2022, 65(6): 162207

Keywords: binary-valued system; switched multi-agent system; recursive projection algorithm; consensus; jointly connected undirected topologies

Cite as: Hu M, Wang T, Zhao Y L. Consensus of switched multi-agent systems with binary-valued communications. Sci China Inf Sci, 2022, 65(6): 162207, doi: 10.1007/s11432-020-3052-0

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Novel dynamic event-triggered coordination for scaled consensus without continuous communication or controller update

Wu, Xihui; Mu, Xiaowu

Sci China Inf Sci, 2022, 65(10): 209202

Keywords: event-triggered; multiagent systems; consensus; coordination; controller

Cite as: Wu X H, Mu X W. Novel dynamic event-triggered coordination for scaled consensus without continuous communication or controller update. Sci China Inf Sci, 2022, 65(10): 209202, doi: 10.1007/s11432-020-3046-8

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A logical network approximation to optimal control on a continuous domain and its application to HEV control

Wu, Yuhu; Zhang, Jiangyan; Shen, Tielong

Sci China Inf Sci, 2022, 65(11): 212203

Keywords: finite horizon optimal control; logical networks; semi-tensor product; quantification; HEV control

Cite as: Wu Y H, Zhang J Y, Shen T L. A logical network approximation to optimal control on a continuous domain and its application to HEV control. Sci China Inf Sci, 2022, 65(11): 212203, doi: 10.1007/s11432-021-3446-8

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New stability conditions of CPSs with multiple transportation channels under DoS attacks

Wei, Jumei; Yan, Xueyan; Zhu, Xunlin; Xu, Mingliang; Ma, Rui; Du, Haiping

Sci China Inf Sci, 2022, 65(11): 219202

Keywords: multiple transmission channels; dos attacks; lmi method; cyber-physical systems; input-to-state stability

Cite as: Wei J M, Yan X Y, Zhu X L, et al. New stability conditions of CPSs with multiple transportation channels under DoS attacks. Sci China Inf Sci, 2022, 65(11): 219202, doi: 10.1007/s11432-020-3130-4

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Cyber topology design guaranteed structural controllability for networked systems

Mu, Jianbin; Li, Shaoyuan; Wu, Jing; Li, Ning

Sci China Inf Sci, 2022, 65(11): 219203

Keywords: networked systems; structural controllability; cyber-physical systems; cps; cyber topology design; matrix-weighted edges

Cite as: Mu J B, Li S Y, Wu J, et al. Cyber topology design guaranteed structural controllability for networked systems. Sci China Inf Sci, 2022, 65(11): 219203, doi: 10.1007/s11432-020-3258-6

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Optimal car-following control for intelligent vehicles using online road-slope approximation method

Chu, Hongqing; Guo, Lulu; Chen, Hong; Gao, Bingzhao

Sci China Inf Sci, 2021, 64(1): 112201

Keywords: car-following control; road-slope approximation; hierarchical design; linear quadratic regulator; intelligent vehicle

Cite as: Chu H Q, Guo L L, Chen H, et al. Optimal car-following control for intelligent vehicles using online road-slope approximation method. Sci China Inf Sci, 2021, 64(1): 112201, doi: 10.1007/s11432-019-2756-3

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Adaptive control of nonlinear systems with severe uncertainties in the input powers

Yu, Linzhen; Liu, Yungang; Man, Yongchao

Sci China Inf Sci, 2021, 64(1): 112211

Keywords: nonlinear systems; severe uncertainties; global stabilization; unknown input powers; switching adaptive control

Cite as: Yu L Z, Liu Y G, Man Y C. Adaptive control of nonlinear systems with severe uncertainties in the input powers. Sci China Inf Sci, 2021, 64(1): 112211, doi: 10.1007/s11432-019-2762-3

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A local observability analysis method for a time-varying nonlinear system and its application in the continuous self-calibration system

Wang, Qi; Wang, Lixin; Qin, Weiwei; Shen, Qiang

Sci China Inf Sci, 2021, 64(1): 119201

Keywords: continuous self-calibration; local observability; piece-wise constant systems; pwcs; observable degree; rotation scheme

Cite as: Wang Q, Wang L X, Qin W W, et al. A local observability analysis method for a time-varying nonlinear system and its application in the continuous self-calibration system. Sci China Inf Sci, 2021, 64(1): 119201, doi: 10.1007/s11432-018-9725-1

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State feedback stabilization of stochastic nonlinear time-delay systems: a dynamic gain method

Jiang, Mengmeng; Xie, Xuejun

Sci China Inf Sci, 2021, 64(1): 119202

Keywords: stochastic nonlinear systems; time-delay; state feedback; dynamic-gain design; asymptotical stabilization

Cite as: Jiang M M, Xie X J. State feedback stabilization of stochastic nonlinear time-delay systems: a dynamic gain method. Sci China Inf Sci, 2021, 64(1): 119202, doi: 10.1007/s11432-018-9565-7

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Dwell-time-based stabilization of switched positive systems with only unstable subsystems

Ma, Ruicheng; An, Shuang; Fu, Jun

Sci China Inf Sci, 2021, 64(1): 119205

Keywords: switched positive systems; multiple time-varying lyapunov functions; unstable modes

Cite as: Ma R C, An S, Fu J. Dwell-time-based stabilization of switched positive systems with only unstable subsystems. Sci China Inf Sci, 2021, 64(1): 119205, doi: 10.1007/s11432-018-9787-9

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Rapid dynamical pattern recognition for sampling sequences

Wu, Weiming; Wang, Qian; Yuan, Chengzhi; Wang, Cong

Sci China Inf Sci, 2021, 64(3): 132201

Keywords: deterministic learning; dynamical pattern recognition; sampling sequence; synchronization

Cite as: Wu W M, Wang Q, Yuan C Z, et al. Rapid dynamical pattern recognition for sampling sequences. Sci China Inf Sci, 2021, 64(3): 132201, doi: 10.1007/s11432-019-2878-y

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Tracking control of redundant manipulator under active remote center-of-motion constraints: an RNN-based metaheuristic approach

Khan, Ameer Hamza; Li, Shuai; Cao, Xinwei

Sci China Inf Sci, 2021, 64(3): 132203

Keywords: tracking control; surgical robots; rcm constraints; metaheuristic optimization; recurrent neural network; rnn; redundant manipulator

Cite as: Khan A H, Li S, Cao X W. Tracking control of redundant manipulator under active remote center-of-motion constraints: an RNN-based metaheuristic approach. Sci China Inf Sci, 2021, 64(3): 132203, doi: 10.1007/s11432-019-2735-6

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Finite element approach to continuous potential games

Hao, Yaqi; Cheng, Daizhan

Sci China Inf Sci, 2021, 64(4): 149202

Keywords: continuous potential game; finite element approach; finite potential sub-game; numerical solution; convergence

Cite as: Hao Y Q, Cheng D Z. Finite element approach to continuous potential games. Sci China Inf Sci, 2021, 64(4): 149202, doi: 10.1007/s11432-018-9763-7

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Stability analysis of a pipe conveying fluid with a nonlinear energy sink

Duan, Nan; Lin, Sida; Wu, Yuhu; Sun, Xi-Ming; Zhong, Chongquan

Sci China Inf Sci, 2021, 64(5): 152201

Keywords: stability analysis; energy disturbance technique; convexity characteristic; pipes conveying fluid; nonlinear energy sink

Cite as: Duan N, Lin S D, Wu Y H, et al. Stability analysis of a pipe conveying fluid with a nonlinear energy sink. Sci China Inf Sci, 2021, 64(5): 152201, doi: 10.1007/s11432-019-2822-3

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Adaptive fuzzy backstepping control for attitude stabilization of flexible spacecraft with signal quantization and actuator faults

Liu, Qihong; Liu, Ming; Duan, Guangren

Sci China Inf Sci, 2021, 64(5): 152205

Keywords: fault-tolerant control; attitude stabilization; signal quantization; adaptive fuzzy control; back-stepping control

Cite as: Liu Q H, Liu M, Duan G R. Adaptive fuzzy backstepping control for attitude stabilization of flexible spacecraft with signal quantization and actuator faults. Sci China Inf Sci, 2021, 64(5): 152205, doi: 10.1007/s11432-020-2949-5

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Exponential stability of discrete-time positive switched T-S fuzzy systems with all unstable subsystems

Yang, Gengjiao; Hao, Fei; Zhang, Lin; Li, Bohu

Sci China Inf Sci, 2021, 64(5): 159205

Keywords: stability analysis; positive switched nonlinear systems; t-s model; unstable subsystems; fast mdadt

Cite as: Yang G J, Hao F, Zhang L, et al. Exponential stability of discrete-time positive switched T-S fuzzy systems with all unstable subsystems. Sci China Inf Sci, 2021, 64(5): 159205, doi: 10.1007/s11432-019-2655-y

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Profile-dynamic based fictitious play

Zhang, Xiao; Cheng, Daizhan

Sci China Inf Sci, 2021, 64(6): 169202

Keywords: fictitious play; nonlinear system; nash equilibrium; dynamic evolution; semi-tensor product of matrices

Cite as: Zhang X, Cheng D Z. Profile-dynamic based fictitious play. Sci China Inf Sci, 2021, 64(6): 169202, doi: 10.1007/s11432-019-9926-2

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Robust control of high-order nonlinear systems with unknown measurement sensitivity

Liu, Cai-Yun; Sun, Zong-Yao; Meng, Qinghua; Sun, Wei

Sci China Inf Sci, 2021, 64(6): 169204

Keywords: robust control; high-order nonlinear systems; time-varying sensitivity; predetermined bounded set; uncontrollable linearization

Cite as: Liu C-Y, Sun Z-Y, Meng Q H, et al. Robust control of high-order nonlinear systems with unknown measurement sensitivity. Sci China Inf Sci, 2021, 64(6): 169204, doi: 10.1007/s11432-019-1467-3

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Optimal comfortability control of hybrid electric powertrains in acceleration mode

Zhang, Bo; Zhang, Yahui; Zhang, Jiangyan; Shen, Tielong

Sci China Inf Sci, 2021, 64(7): 172201

Keywords: ride comfortability; black-box module; hybrid electric vehicles (hevs); genetic algorithm (ga); acceleration mode

Cite as: Zhang B, Zhang Y H, Zhang J Y, et al. Optimal comfortability control of hybrid electric powertrains in acceleration mode. Sci China Inf Sci, 2021, 64(7): 172201, doi: 10.1007/s11432-020-2912-2

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Model predictive control with fractional-order delay compensation for fast sampling systems

Zhou, Ze; Liu, Zhitao; Su, Hongye; Zhang, Liyan

Sci China Inf Sci, 2021, 64(7): 172211

Keywords: model predictive control; fast sampling systems; sampling delay; fractional-order; lagrange interpolation polynomial

Cite as: Zhou Z, Liu Z T, Su H Y, et al. Model predictive control with fractional-order delay compensation for fast sampling systems. Sci China Inf Sci, 2021, 64(7): 172211, doi: 10.1007/s11432-020-3096-0

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Containment control of multi-agent systems with nonvanishing disturbance via topology reconfiguration

Shan, Qihe; Teng, Fei; Li, Tieshan; Chen, C. L. Philip

Sci China Inf Sci, 2021, 64(7): 179203

Keywords: multi-agent; nonvanishing disturbance; topology reconfiguration; containment control; convex parameters

Cite as: Shan Q H, Teng F, Li T S, et al. Containment control of multi-agent systems with nonvanishing disturbance via topology reconfiguration. Sci China Inf Sci, 2021, 64(7): 179203, doi: 10.1007/s11432-018-9695-2

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A novel strategy to solve communication constraints for formation control of multi-AUVs

Gao, Zhenyu; Guo, Ge

Sci China Inf Sci, 2021, 64(7): 179204

Keywords: event-triggered; fixed-time stable; velocity observer; formation control; autonomous underwater vehicles

Cite as: Gao Z Y, Guo G. A novel strategy to solve communication constraints for formation control of multi-AUVs. Sci China Inf Sci, 2021, 64(7): 179204, doi: 10.1007/s11432-018-9672-1

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Quantized tracking control for nonlinear systems with unstable linearization

Liu, Ying; Li, Wuquan; Yao, Xiaoxiao

Sci China Inf Sci, 2021, 64(7): 179205

Keywords: quantized tracking control; unstable linearization; nonlinear system; backstepping; globally uniformly bounded

Cite as: Liu Y, Li W Q, Yao X X. Quantized tracking control for nonlinear systems with unstable linearization. Sci China Inf Sci, 2021, 64(7): 179205, doi:

10.1007/s11432-018-9737-4

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Output feedback stabilization for power-integrator systems with unknown measurement sensitivity

Shao, Yu; Sun, Zong-Yao; Xie, Xue-Jun; Liu, Zhen-Guo

Sci China Inf Sci, 2021, 64(9): 199201

Keywords: output feedback; homogeneous observer; unknown measurement sensitivity; adding a power integrator; reduced-order observer

Cite as: Shao Y, Sun Z-Y, Xie X-J, et al. Output feedback stabilization for power-integrator systems with unknown measurement sensitivity. Sci China Inf Sci,

2021, 64(9): 199201, doi: 10.1007/s11432-018-9773-3

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Predictive coordinated control of fuel consumption and emissions for diesel engine vehicles under intelligent network environments

Liu, Di; Chen, Hong; Gao, Jinwu; Zhao, Jinghua; Hu, Yunfeng

Sci China Inf Sci, 2021, 64(9): 199202

Keywords: predictive control; coordinated control; constraint; intelligent network information; diesel vehicle

Cite as: Liu D, Chen H, Gao J W, et al. Predictive coordinated control of fuel consumption and emissions for diesel engine vehicles under intelligent network

environments. Sci China Inf Sci, 2021, 64(9): 199202, doi: 10.1007/s11432-018-9796-1

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Global adaptive stabilization for planar nonlinear systems with unknown input powers

Man, Yongchao; Liu, Yungang

Sci China Inf Sci, 2021, 64(9): 199204

Keywords: nonlinear systems; multiple serious uncertainties; unknown input powers; adaptive control; global stabilization

Cite as: Man Y C, Liu Y G. Global adaptive stabilization for planar nonlinear systems with unknown input powers. Sci China Inf Sci, 2021, 64(9): 199204, doi:

10.1007/s11432-018-9774-y

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Fixed-time attitude tracking control for spacecraft based on a fixed-time extended state observer

Zhang, Lijun; Xia, Yuanqing; Shen, Ganghui; Cui, Bing

Sci China Inf Sci, 2021, 64(11): 212201

Keywords: spacecraft; fixed time; attitude tracking; fxteso; fntsmc

Cite as: Zhang L J, Xia Y Q, Shen G H, et al. Fixed-time attitude tracking control for spacecraft based on a fixed-time extended state observer. Sci China Inf Sci,

2021, 64(11): 212201, doi: 10.1007/s11432-019-2823-9

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Stability and stabilization of a class of switched stochastic systems with saturation control

Guo, Yingxin; Ge, Shuzhi Sam; Fu, Jianting; Xu, Chao

Sci China Inf Sci, 2021, 64(12): 222201

Keywords: switched stochastic systems; matric theory; gronwall inequality; stability

Cite as: Guo Y X, Ge S S, Fu J T, et al. Stability and stabilization of a class of switched stochastic systems with saturation control. Sci China Inf Sci, 2021, 64(12): 222201, doi: 10.1007/s11432-020-3002-7

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Global practical tracking via disturbance rejection control for uncertain nonlinear systems with quantized input and output

Fan, Debao; Zhang, Xianfu; Chang, Yanjie; Lu, Xiaodong

Sci China Inf Sci, 2022, 65(1): 119201

Keywords: global practical tracking; time-varying external disturbance; quantized input and output; gpio; output feedback; uncertain nonlinear systems

Cite as: Fan D B, Zhang X F, Chang Y J, et al. Global practical tracking via disturbance rejection control for uncertain nonlinear systems with quantized input and output. Sci China Inf Sci, 2022, 65(1): 119201, doi: 10.1007/s11432-019-2786-1

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Torque allocation of four-wheel drive EVs considering tire slip energy

Gao, Bingzhao; Yan, Yongjun; Chu, Hong; Chen, Hong; Xu, Nan

Sci China Inf Sci, 2022, 65(2): 122202

Keywords: control allocation; four-wheel drive electric vehicles; tire slip energy model; multi-objective optimization

Cite as: Gao B Z, Yan Y J, Chu H, et al. Torque allocation of four-wheel drive EVs considering tire slip energy. Sci China Inf Sci, 2022, 65(2): 122202, doi: 10.1007/s11432-019-2946-8

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New stability results of generalized impulsive functional differential equations

Liu, Chao; Liu, Xiaoyang; Yang, Zheng; Yang, Hongyu; Huang, Junjian

Sci China Inf Sci, 2022, 65(2): 129201

Keywords: stability; impulsive functional differential equation; uniformly stable function; razumikhin technique; lyapunov function

Cite as: Liu C, Liu X Y, Yang Z, et al. New stability results of generalized impulsive functional differential equations. Sci China Inf Sci, 2022, 65(2): 129201, doi: 10.1007/s11432-019-2711-4

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Open-source dataset of vehicle state for an electric vehicle on a low-adhesion road

Cai, Shuo; Ding, Haitao; Hu, Yunfeng; Zhang, Lin; Li, Qin; Chen, Hong

Sci China Inf Sci, 2022, 65(3): 137201

Keywords: vehicle experimental data; dynamics modeling; state estimation; control system design; low adhesion road

Cite as: Cai S, Ding H T, Hu Y F, et al. Open-source dataset of vehicle state for an electric vehicle on a low-adhesion road. Sci China Inf Sci, 2022, 65(3): 137201, doi: 10.1007/s11432-020-3200-5

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Observer-based boundary control for an asymmetric output-constrained flexible robotic manipulator

Liu, Yu; Chen, Xiongbin; Mei, Yanfang; Wu, Yilin

Sci China Inf Sci, 2022, 65(3): 139203

Keywords: distributed parameter system; vibration control; asymmetric constraint; disturbance observer; well-posedness; partial differential equation

Cite as: Liu Y, Chen X B, Mei Y F, et al. Observer-based boundary control for an asymmetric output-constrained flexible robotic manipulator. Sci China Inf Sci, 2022, 65(3): 139203, doi: 10.1007/s11432-019-2893-y

[非线性系统与控制](#) [LETTER](#) [Website](#) [SpringerLink](#) [Google Scholar](#) [Supplementary](#)

Nonlinear model predictive control for trajectory tracking of quadrotors using Lyapunov techniques

Wang, Dong; Pan, Quan; Hu, Jinwen; Zhao, Chunhui

Sci China Inf Sci, 2022, 65(6): 169202

Keywords: trajectory tracking; obstacle avoidance; input constraints; commercial quadrotors; nonlinear model predictive control

Cite as: Wang D, Pan Q, Hu J W, et al. Nonlinear model predictive control for trajectory tracking of quadrotors using Lyapunov techniques. Sci China Inf Sci, 2022, 65(6): 169202, doi: 10.1007/s11432-020-3053-y

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MPC-based strategy for longitudinal and lateral stabilization of a vehicle under extreme conditions

Li, Zihan; Wang, Ping; Zhu, Chaojie; Hu, Yunfeng; Chen, Hong

Sci China Inf Sci, 2022, 65(7): 179203

Keywords: model predictive control; stability control; combined-slip characteristics; lugre tire model; extreme driving conditions

Cite as: Li Z H, Wang P, Zhu C J, et al. MPC-based strategy for longitudinal and lateral stabilization of a vehicle under extreme conditions. Sci China Inf Sci, 2022, 65(7): 179203, doi: 10.1007/s11432-019-3070-y

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Discrete-time delay systems: part 1. Global fully actuated case

Duan, Guangren

Sci China Inf Sci, 2022, 65(8): 182201

Keywords: discrete-time systems; time-delay systems; time-varying delays; fully actuated systems; control designs

Cite as: Duan G R. Discrete-time delay systems: part 1. Global fully actuated case. Sci China Inf Sci, 2022, 65(8): 182201, doi: 10.1007/s11432-021-3417-3

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Adaptive output-feedback tracking for nonlinear systems with unknown control direction and generic inverse dynamics

Wang, Yuan; Liu, Yungang

Sci China Inf Sci, 2022, 65(8): 182204

Keywords: nonlinear systems; ISpS inverse dynamics; unknown control direction; practical output tracking; global output feedback; adaptive compensation

Cite as: Wang Y, Liu Y G. Adaptive output-feedback tracking for nonlinear systems with unknown control direction and generic inverse dynamics. Sci China Inf Sci, 2022, 65(8): 182204, doi: 10.1007/s11432-020-3207-3

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HOSM controller design with asymmetric output constraints

Mei, Keqi; Ding, Shihong

Sci China Inf Sci, 2022, 65(8): 189202

Keywords: sliding mode control; finite-time convergence; constrained control; robust control; adding a power integrator

Cite as: Mei K Q, Ding S H. HOSM controller design with asymmetric output constraints. Sci China Inf Sci, 2022, 65(8): 189202, doi: 10.1007/s11432-020-3158-8

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Simplified prescribed performance tracking control of uncertain nonlinear systems

Fan, Quan-Yong; Xu, Shuoheng; Xu, Bin; Qiu, Jianlong

Sci China Inf Sci, 2022, 65(8): 189204

Keywords: nonlinear systems; tracking control; prescribed performance control; neural network; sum of squares

Cite as: Fan Q-Y, Xu S H, Xu B, et al. Simplified prescribed performance tracking control of uncertain nonlinear systems. *Sci China Inf Sci*, 2022, 65(8): 189204, doi: 10.1007/s11432-020-2989-1

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Discrete-time delay systems: part 2. Sub-fully actuated case

Duan, Guangren

Sci China Inf Sci, 2022, 65(9): 192201

Keywords: time-delay systems; discrete-time systems; sub-fully actuation; control designs; feasibility

Cite as: Duan G R. Discrete-time delay systems: part 2. Sub-fully actuated case. *Sci China Inf Sci*, 2022, 65(9): 192201, doi: 10.1007/s11432-021-3448-1

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Observability of Galois nonlinear feedback shift registers

Kong, Wenhui; Zhong, Jianghua; Lin, Dongdai

Sci China Inf Sci, 2022, 65(9): 192206

Keywords: shift register; stream cipher; observability; Boolean network; semi-tensor product

Cite as: Kong W H, Zhong J H, Lin D D. Observability of Galois nonlinear feedback shift registers. *Sci China Inf Sci*, 2022, 65(9): 192206, doi: 10.1007/s11432-021-3346-6

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Leader-follower formation control of underactuated surface vessels

He, Xiaodong; Geng, Zhiyong

Sci China Inf Sci, 2022, 65(10): 209201

Keywords: underactuated surface vessel; leader-follower formation; lie group; formation feasibility; trajectory tracking

Cite as: He X D, Geng Z Y. Leader-follower formation control of underactuated surface vessels. *Sci China Inf Sci*, 2022, 65(10): 209201, doi: 10.1007/s11432-020-2948-y

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Fully actuated system approach to attitude control of flexible spacecraft with nonlinear time-varying inertia

Zhao, Tianyi; Duan, Guang-Ren

Sci China Inf Sci, 2022, 65(11): 212201

Keywords: high-order fully actuated system; flexible spacecraft; time-varying nonlinear systems; attitude stabilization; attitude maneuvering

Cite as: Zhao T Y, Duan G-R. Fully actuated system approach to attitude control of flexible spacecraft with nonlinear time-varying inertia. *Sci China Inf Sci*, 2022, 65(11): 212201, doi: 10.1007/s11432-021-3349-3

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Further results on bilinear behavior formulation of finite state machines

Yue, Jumei; Yan, Yongyi; Chen, Zengqiang; Deng, He

Sci China Inf Sci, 2022, 65(11): 219201

Keywords: behavior formulation; finite state machines; controllability; reachability; semi-tensor product of matrices

Cite as: Yue J M, Yan Y Y, Chen Z Q, et al. Further results on bilinear behavior formulation of finite state machines. *Sci China Inf Sci*, 2022, 65(11): 219201, doi: 10.1007/s11432-020-3161-6

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Positivity and stability of timescale-type linear singular systems with time delays

Lu, Xiaodong; Li, Haitao; Zhang, Xianfu

Sci China Inf Sci, 2022, 65(12): 222201

Keywords: positivity; stability; time delay; linear singular systems; timescale-type systems

Cite as: Lu X D, Li H T, Zhang X F. Positivity and stability of timescale-type linear singular systems with time delays. Sci China Inf Sci, 2022, 65(12): 222201, doi: 10.1007/s11432-022-3517-7

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A population randomization-based multi-objective genetic algorithm for gesture adaptation in human-robot interaction

Chen, Luefeng; Su, Wanjuan; Li, Min; Wu, Min; Pedrycz, Witold; Hirota, Kaoru

Sci China Inf Sci, 2021, 64(1): 112208

Keywords: multi-objective genetic algorithm; gesture adaptation; human-robot interaction

Cite as: Chen L F, Su W J, Li M, et al. A population randomization-based multi-objective genetic algorithm for gesture adaptation in human-robot interaction. Sci China Inf Sci, 2021, 64(1): 112208, doi: 10.1007/s11432-019-2749-0

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Line-of-sight based three-dimensional path following control for an underactuated robotic dolphin

Liu, Jincun; Liu, Zhenna; Yu, Junzhi

Sci China Inf Sci, 2021, 64(1): 112210

Keywords: robotic dolphin; path following; 3-d; los guidance law; decoupling motion

Cite as: Liu J C, Liu Z N, Yu J Z. Line-of-sight based three-dimensional path following control for an underactuated robotic dolphin. Sci China Inf Sci, 2021, 64(1): 112210, doi: 10.1007/s11432-019-2743-8

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Wearable ubiquitous energy system

Deng, Fang; Ding, Ning; Ye, Ziman; Cai, Yeyun; Chen, Jie

Sci China Inf Sci, 2021, 64(2): 124201

Keywords: wearable energy harvesting; ubiquitous energy; energy control; wearable device; human body

Cite as: Deng F, Ding N, Ye Z M, et al. Wearable ubiquitous energy system. Sci China Inf Sci, 2021, 64(2): 124201, doi: 10.1007/s11432-020-2895-3

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Active knee joint exoskeleton for stair ascent augmentation

Zhang, Zongwei; Fan, Jizhuang; Jin, Hongzhe; Zheng, Tianjiao; Zhao, Sikai; Ma, Shun; Zhao, Jie; Zhu, Yanhe

Sci China Inf Sci, 2021, 64(3): 139204

Keywords: exoskeleton; stair climbing; hybrid control; zero-force tracking; switching controller

Cite as: Zhang Z W, Fan J Z, Jin H Z, et al. Active knee joint exoskeleton for stair ascent augmentation. Sci China Inf Sci, 2021, 64(3): 139204, doi: 10.1007/s11432-018-9767-6

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Queue estimation for isolated signalized intersections in intelligent vehicle-infrastructure cooperation systems

Wang, Yunpeng; Guo, Ge; Yue, Wei

Sci China Inf Sci, 2021, 64(4): 149203

Keywords: intelligent vehicle-infrastructure cooperation systems (i-vics); traffic information prediction; real time queue length; queue length estimation; traffic flow model

Cite as: Wang Y P, Guo G, Yue W. Queue estimation for isolated signalized intersections in intelligent vehicle-infrastructure cooperation systems. Sci China Inf Sci, 2021, 64(4): 149203, doi: 10.1007/s11432-018-9629-2

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Event-triggered shared lateral control for safe-maneuver of intelligent vehicles

Jiang, Yan; Zhang, Xinglong; Xu, Xin; Zhou, Xing; Dong, Zhengzheng
Sci China Inf Sci, 2021, 64(7): 172203

Keywords: trajectory prediction; risk assessment; shared lateral control; model predictive control

Cite as: Jiang Y, Zhang X L, Xu X, et al. Event-triggered shared lateral control for safe-maneuver of intelligent vehicles. Sci China Inf Sci, 2021, 64(7): 172203, doi: 10.1007/s11432-020-2961-8

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Novel sliding-mode disturbance observer-based tracking control with applications to robot manipulators

Sun, Tairen; Cheng, Long; Hou, Zengguang; Tan, Min
Sci China Inf Sci, 2021, 64(7): 172205

Keywords: adaptive control; robot manipulator; disturbance observer; sliding mode

Cite as: Sun T R, Cheng L, Hou Z G, et al. Novel sliding-mode disturbance observer-based tracking control with applications to robot manipulators. Sci China Inf Sci, 2021, 64(7): 172205, doi: 10.1007/s11432-020-3043-y

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Trajectory prediction of cyclist based on dynamic Bayesian network and long short-term memory model at unsignalized intersections

Gao, Hongbo; Su, Hang; Cai, Yingfeng; Wu, Renfei; Hao, Zhengyuan; Xu, Yongneng; Wu, Wei; Wang, Jianqing; Li, Zhijun; Kan, Zhen

Sci China Inf Sci, 2021, 64(7): 172207

Keywords: trajectory prediction; dynamic bayesian network (dbn); long short-term memory (lstm); unsignalized intersections; motion intention

Cite as: Gao H B, Su H, Cai Y F, et al. Trajectory prediction of cyclist based on dynamic Bayesian network and long short-term memory model at unsignalized intersections. Sci China Inf Sci, 2021, 64(7): 172207, doi: 10.1007/s11432-020-3071-8

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Smooth quadrotor trajectory generation for tracking a moving target in cluttered environments

Xi, Lele; Peng, Zhihong; Jiao, Lei; Chen, Ben M.

Sci China Inf Sci, 2021, 64(7): 172209

Keywords: quadrotor; target tracking; trajectory generation; b-spline; convex optimization

Cite as: Xi L L, Peng Z H, Jiao L, et al. Smooth quadrotor trajectory generation for tracking a moving target in cluttered environments. Sci China Inf Sci, 2021, 64(7): 172209, doi: 10.1007/s11432-020-3056-5

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Snoring detection based on a stretchable strain sensor

Li, Zhengwei; Song, Qingkun; Cheng, Long; Tan, Min

Sci China Inf Sci, 2021, 64(7): 174201

Keywords: snoring detection; strain sensor; sleeping quality monitoring; detection algorithm; wearable device

Cite as: Li Z W, Song Q K, Cheng L, et al. Snoring detection based on a stretchable strain sensor. Sci China Inf Sci, 2021, 64(7): 174201, doi: 10.1007/s11432-019-2674-2

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The AIDER system and its clinical applications

Wang, Yilin; Cheng, Hong; Qiu, Jing; Zhang, Anren; He, Hongchen

Sci China Inf Sci, 2021, 64(8): 184201

Keywords: exoskeleton; the aider system; sci subjects; safety; effectiveness

Cite as: Wang Y L, Cheng H, Qiu J, et al. The AIDER system and its clinical applications. Sci China Inf Sci, 2021, 64(8): 184201, doi: 10.1007/s11432-019-9917-0

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GPR and SPSO-CG based gait pattern generation for subject-specific training

Wang, Weiqun; Shi, Weiguo; Ren, Shixin; Hou, Zeng-Guang; Liang, Xu; Wang, Jiaxin; Peng, Liang

Sci China Inf Sci, 2021, 64(8): 189204

Keywords: rehabilitation robot; gait training; modeling and optimization; subject-specific training; gait pattern generation

Cite as: Wang W Q, Shi W G, Ren S X, et al. GPR and SPSO-CG based gait pattern generation for subject-specific training. Sci China Inf Sci, 2021, 64(8): 189204, doi: 10.1007/s11432-018-9816-4

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Adaptive compensation for time-varying uncertainties in model-based control of lower-limb exoskeleton systems

Song, Guangkui; Huang, Rui; Cheng, Hong; Qiu, Jing; Fan, Shuai

Sci China Inf Sci, 2021, 64(11): 219201

Keywords: reinforcement learning; interaction learning; human-robot interaction; inaccurate dynamic model; time-varying uncertainties; compensation strategy; lower exoskeleton

Cite as: Song G K, Huang R, Cheng H, et al. Adaptive compensation for time-varying uncertainties in model-based control of lower-limb exoskeleton systems. Sci China Inf Sci, 2021, 64(11): 219201, doi: 10.1007/s11432-019-2754-9

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Center tracking for healthy and diseased cardia

Su, Baiquan; Teng, Yunlai; Wang, Zehao; Hu, Yida; Kuang, Shaolong; Wang, Ye; Zhang, Tingting; Tang, Jie; Yao, Wei; Zong, Ye

Sci China Inf Sci, 2021, 64(11): 219203

Keywords: anatomical structure recognition; medical gastrointestinal robot; image guidance; cardia center; realtime tracking

Cite as: Su B Q, Teng Y L, Wang Z H, et al. Center tracking for healthy and diseased cardia. Sci China Inf Sci, 2021, 64(11): 219203, doi: 10.1007/s11432-020-2978-6

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Optimal design of a scaled-up PRO system using swarm intelligence approach

Chen, Yingxue; Shi, Zhongke; Xu, Bin; Shaheed, Mohammad Hasan

Sci China Inf Sci, 2021, 64(12): 222203

Keywords: maximum power point tracking; mppt; swarm intelligence; metaheuristic algorithms; pressure-retarded osmosis; pro; harris hawks optimization; hho

Cite as: Chen Y X, Shi Z K, Xu B, et al. Optimal design of a scaled-up PRO system using swarm intelligence approach. Sci China Inf Sci, 2021, 64(12): 222203, doi: 10.1007/s11432-020-3110-x

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Manipulation skill learning on multi-step complex task based on explicit and implicit curriculum learning

Liu, Najun; Lu, Tao; Cai, Yinghao; Wang, Rui; Wang, Shuo

Sci China Inf Sci, 2022, 65(1): 114201

Keywords: robot; manipulation skill learning; complex task; deep reinforcement learning; curriculum learning

Cite as: Liu N J, Lu T, Cai Y H, et al. Manipulation skill learning on multi-step complex task based on explicit and implicit curriculum learning. Sci China Inf Sci, 2022, 65(1): 114201, doi: 10.1007/s11432-019-2648-7

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Human guided cooperative robotic agents in smart home using beetle antennae search

Khan, Ameer Tamoor; Li, Shuai; Cao, Xinwei

Sci China Inf Sci, 2022, 65(2): 122204

Keywords: network; human guided smart-home; assistive agents; metaheuristic optimization; beetle antennae search; zeroing neural

Cite as: Khan A T, Li S, Cao X W. Human guided cooperative robotic agents in smart home using beetle antennae search. Sci China Inf Sci, 2022, 65(2): 122204,

doi: 10.1007/s11432-020-3073-5

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Modeling and analysis of an underwater biomimetic vehicle-manipulator system

Bai, Xuejian; Wang, Yu; Wang, Shuo; Wang, Rui; Tan, Min; Wang, Wei

Sci China Inf Sci, 2022, 65(3): 134201

Keywords: underwater biomimetic vehicle; underwater robots; underwater vehicle-manipulator system; biomimetic robots; hydrodynamic modeling

Cite as: Bai X J, Wang Y, Wang S, et al. Modeling and analysis of an underwater biomimetic vehicle-manipulator system. Sci China Inf Sci, 2022, 65(3): 134201,

doi: 10.1007/s11432-020-3054-7

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Active model-based nonlinear system identification of quad tilt-rotor UAV with flight experiments

Liu, Zhong; Theilliol, Didier; He, Yuqing; Gu, Feng; Yang, Liying; Han, Jianda

Sci China Inf Sci, 2022, 65(8): 182202

Keywords: tilt-rotor; unmanned aerial vehicle; flight control; nonlinear system identification; active model method; unscented Kalman filter

Cite as: Liu Z, Theilliol D, He Y Q, et al. Active model-based nonlinear system identification of quad tilt-rotor UAV with flight experiments. Sci China Inf Sci,

2022, 65(8): 182202, doi: 10.1007/s11432-020-3074-5

[机器人与无人系统](#) [RESEARCH PAPER](#) [Website](#) [SpringerLink](#) [Google Scholar](#)

A gecko-inspired adhesive robotic end effector for critical-contact manipulation

Chu, Zhongyi; Deng, Jie; Su, Lin; Cui, Jing; Sun, Fuchun

Sci China Inf Sci, 2022, 65(8): 182203

Keywords: critical-contact manipulation; gecko-inspired microwedge adhesive; robotic end effector; half-scissor variable-scale actuator; tactile sensor

Cite as: Chu Z Y, Deng J, Su L, et al. A gecko-inspired adhesive robotic end effector for critical-contact manipulation. Sci China Inf Sci, 2022, 65(8): 182203, doi:

10.1007/s11432-020-3152-7

[机器人与无人系统](#) [RESEARCH PAPER](#) [Website](#) [SpringerLink](#) [Google Scholar](#)

Disturbance observer-based nonsingular fixed-time sliding mode tracking control for a quadcopter

Cheng, Xing; Liu, Zhi-Wei; Hou, Huazhou; Guan, Zhi-Hong

Sci China Inf Sci, 2022, 65(9): 192202

Keywords: fixed-time disturbance observer; fixed-time sliding mode control; quadcopter; trajectory tracking; nonsingular

Cite as: Cheng X, Liu Z-W, Hou H Z, et al. Disturbance observer-based nonsingular fixed-time sliding mode tracking control for a quadcopter. Sci China Inf Sci,

2022, 65(9): 192202, doi: 10.1007/s11432-020-3153-x

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Numerical and experimental investigation of aerodynamic heat control of leading edge of hypersonic vehicle's flexible skin

Lu, Xiaozhou; Yuan, Chao; Bao, Weimin; Bai, Guanghui; Meng, Fancheng

Sci China Inf Sci, 2022, 65(10): 202203

Keywords: hypersonic vehicle; flexible skin; ultra-thermal protection; micro-channel; transpiration cooling

Cite as: Lv X Z, Yuan C, Bao W M, et al. Numerical and experimental investigation of aerodynamic heat control of leading edge of hypersonic vehicle's flexible skin. Sci China Inf Sci, 2022, 65(10): 202203, doi: 10.1007/s11432-021-3312-4

[机器人与无人系统](#) [RESEARCH PAPER](#) [Website](#) [SpringerLink](#) [Google Scholar](#)

Accurate RGB-D SLAM in dynamic environments based on dynamic visual feature removal

Liu, Chenxin; Qin, Jiahu; Wang, Shuai; Yu, Lei; Wang, Yaonan

Sci China Inf Sci, 2022, 65(10): 202206

Keywords: SLAM; dynamic environments; indoor localization; graph-cut; robot navigation

Cite as: Liu C X, Qin J H, Wang S, et al. Accurate RGB-D SLAM in dynamic environments based on dynamic visual feature removal. Sci China Inf Sci, 2022, 65(10): 202206, doi: 10.1007/s11432-021-3425-8

[机器人与无人系统](#) [NEWS & VIEWS](#) [Website](#) [SpringerLink](#) [Google Scholar](#)

IEEE standard pioneered an IT-led interdisciplinary approach to structure low-altitude airspace for UAV operations

Wu, Chenchen; Liao, Xiaohan; Yang, Fei

Sci China Inf Sci, 2022, 65(10): 207201

Keywords: Unmanned Aerial Vehicle; UAV; Information Technology; Low-altitude airspace; IEEE standard; UAV operations

Cite as: Xu C C, Liao X H, Yang F. IEEE standard pioneered an IT-led interdisciplinary approach to structure low-altitude airspace for UAV operations. Sci China Inf Sci, 2022, 65(10): 207201, doi: 10.1007/s11432-022-3516-2

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Robust autonomous landing of UAVs in non-cooperative environments based on comprehensive terrain understanding

Chen, Lyujie; Xiao, Yao; Yuan, Xiaming; Zhang, Yiding; Zhu, Jihong

Sci China Inf Sci, 2022, 65(11): 212202

Keywords: UAV; autonomous landing; terrain understanding; depth completion; semantic segmentation

Cite as: Chen L J, Xiao Y, Yuan X M, et al. Robust autonomous landing of UAVs in non-cooperative environments based on comprehensive terrain understanding. Sci China Inf Sci, 2022, 65(11): 212202, doi: 10.1007/s11432-021-3429-1

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Improving performance of robots using human-inspired approaches: a survey

Qiao H, Zhong S L, Chen Z Y, et al

Sci China Inf Sci, 2022, 65(12): 221201

Keywords: human-inspired intelligent robots; brain-inspired intelligence; decision making; visual cognition; musculoskeletal robots

Cite as: Qiao H, Zhong S L, Chen Z Y, et al. Improving performance of robots using human-inspired approaches: a survey. Sci China Inf Sci, 2022, 65(12): 221201, doi: 10.1007/s11432-022-3606-1

[鲁棒控制与自适应控制](#) [RESEARCH PAPER](#) [Website](#) [SpringerLink](#) [Google Scholar](#) [Homepage](#)

Hybrid neural state machine for neural network

Tian, Lei; Wu, Zhenzhi; Wu, Shuang; Shi, Luping

Sci China Inf Sci, 2021, 64(3): 132202

Keywords: hybrid neural state machine; anns; snns; supervised learning; context-aware task; sequential task

Cite as: Tian L, Wu Z Z, Wu S, et al. Hybrid neural state machine for neural network. Sci China Inf Sci, 2021, 64(3): 132202, doi: 10.1007/s11432-019-2988-1

[Highly Cited Paper](#) [Hot Paper](#) [鲁棒控制与自适应控制](#) [RESEARCH PAPER](#) [Website](#) [SpringerLink](#) [Google Scholar](#)

Modeling and adaptive control for a spatial flexible spacecraft with unknown actuator failures

Liu, Zhijie; Han, Zhiji; Zhao, Zhijia; He, Wei

Sci China Inf Sci, 2021, 64(5): 152208

Keywords: adaptive control; actuator failures; infinite-dimensional systems; flexible spacecraft; fault tolerant control

Cite as: Liu Z J, Han Z J, Zhao Z J, et al. Modeling and adaptive control for a spatial flexible spacecraft with unknown actuator failures. Sci China Inf Sci, 2021, 64(5): 152208, doi: 10.1007/s11432-020-3109-x

[鲁棒控制与自适应控制](#) [RESEARCH PAPER](#) [Website](#) [SpringerLink](#) [Google Scholar](#)

In-hand manipulation of a circular dynamic object by soft fingertips without angle measurement

Garcia-Rodriguez, R.; Parra-Vega, V.

Sci China Inf Sci, 2021, 64(5): 152209

Keywords: optimal grasping; manipulation; soft-fingertips; circular object; stability-in-the-manifold

Cite as: Garcia-Rodriguez R, Parra-Vega V. In-hand manipulation of a circular dynamic object by soft fingertips without angle measurement. Sci China Inf Sci, 2021, 64(5): 152209, doi: 10.1007/s11432-020-3059-9

[鲁棒控制与自适应控制](#) [LETTER](#) [Website](#) [SpringerLink](#) [Google Scholar](#)

Optimal active-disturbance-rejection control for propulsion of anchor-hole drillers

Guo, Yanan; Zhang, Zhen; Gong, Dunwei; Lu, Xiwang; Zhang, Yang; Cheng, Wei

Sci China Inf Sci, 2021, 64(5): 159201

Keywords: active-disturbance-rejection control; particle swarm optimization; hydraulic force-servo system; propulsion; anchor-hole driller

Cite as: Guo Y N, Zhang Z, Gong D W, et al. Optimal active-disturbance-rejection control for propulsion of anchor-hole drillers. Sci China Inf Sci, 2021, 64(5): 159201, doi: 10.1007/s11432-018-9815-8

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Learning continuous coupled multi-controller coefficients based on actor-critic algorithm for lower-limb exoskeleton

Song, Guangkui; Huang, Rui; Cheng, Hong; Qui, Jing; Cheng, Qiming; Fan, Shuai

Sci China Inf Sci, 2021, 64(5): 159203

Keywords: interactive learning; actor-critic; reinforcement learning; physical human-robot interaction; lower-limb exoskeleton; human-powered augmentation; continuous domain; learning continuous coefficient

Cite as: Song G K, Huang R, Cheng H, et al. Learning continuous coupled multi-controller coefficients based on actor-critic algorithm for lower-limb exoskeleton. Sci China Inf Sci, 2021, 64(5): 159203, doi: 10.1007/s11432-018-9779-6

[鲁棒控制与自适应控制](#) [LETTER](#) [Website](#) [SpringerLink](#) [Google Scholar](#) [Supplementary](#)

Finite-time adaptive robust simultaneous stabilization of nonlinear delay systems by the Hamiltonian function method

Yang, Renming; Pei, Wenhui; Han, Yaozhen; Sun, Liying

Sci China Inf Sci, 2021, 64(6): 169201

Keywords: nonlinear time-delay system; finite-time simultaneous stabilization; adaptive control; hamiltonian function; robust stabilization

Cite as: Yang R M, Pei W H, Han Y Z, et al. Finite-time adaptive robust simultaneous stabilization of nonlinear delay systems by the Hamiltonian function method. Sci China Inf Sci, 2021, 64(6): 169201, doi: 10.1007/s11432-019-2804-2

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Suboptimal adaptive tracking control for FIR systems with binary-valued observations

Li, Xiangquan; Xu, Zhengguang; Cui, Jiarui; Zhang, Lixin

Sci China Inf Sci, 2021, 64(7): 172202

Keywords: parameter identification; fir systems; binary-valued observations; asymptotically suboptimal tracking; adaptive control

Cite as: Li X Q, Xu Z G, Cui J R, et al. Suboptimal adaptive tracking control for FIR systems with binary-valued observations. Sci China Inf Sci, 2021, 64(7): 172202, doi: 10.1007/s11432-020-2914-2

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Cooperative neural-adaptive fault-tolerant output regulation for heterogeneous nonlinear uncertain multiagent systems with disturbance

Dong, Shanling; Chen, Guanrong; Liu, Meiqin; Wu, Zheng-Guang

Sci China Inf Sci, 2021, 64(7): 172212

Keywords: cooperative output regulation; actuator failure; matched disturbance; mismatched disturbance; distributed finite-time observer; neural-adaptive control

Cite as: Dong S L, Chen G R, Liu M Q, et al. Cooperative neural-adaptive fault-tolerant output regulation for heterogeneous nonlinear uncertain multiagent systems with disturbance. Sci China Inf Sci, 2021, 64(7): 172212, doi: 10.1007/s11432-020-3122-6

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Distributed event triggering control for six-rotor UAV systems with asymmetric time-varying output constraints

Cao, Liang; Ren, Hongru; Meng, Wei; Li, Hongyi; Lu, Renquan

Sci China Inf Sci, 2021, 64(7): 172213

Keywords: adaptive neural control; asymmetric time-varying output constraints; event triggering mechanism; input saturation; six-rotor uav systems

Cite as: Cao L, Ren H R, Meng W, et al. Distributed event triggering control for six-rotor UAV systems with asymmetric time-varying output constraints. Sci China Inf Sci, 2021, 64(7): 172213, doi: 10.1007/s11432-020-3128-2

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A variable-period scheme for dynamic sampled-data stabilization

Huang, Yaxin; Liu, Yungang

Sci China Inf Sci, 2021, 64(8): 189201

Keywords: sampled-data control; adaptive control; variable sampling periods; stabilization; switching

Cite as: Huang Y X, Liu Y G. A variable-period scheme for dynamic sampled-data stabilization. Sci China Inf Sci, 2021, 64(8): 189201, doi: 10.1007/s11432-018-9679-1

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Adaptive control with saturation-constrained observations for drag-free satellites — a set-valued identification approach

Tan, Shuping; Guo, Jin; Zhao, Yanlong; Zhang, Jifeng

Sci China Inf Sci, 2021, 64(10): 202202

Keywords: drag-free satellite; saturation constraint; adaptive control; set-valued identification

Cite as: Tan S P, Guo J, Zhao Y L, et al. Adaptive control with saturation-constrained observations for drag-free satellites — a set-valued identification approach. Sci China Inf Sci, 2021, 64(10): 202202, doi: 10.1007/s11432-020-3145-0

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Neural learning control for discrete-time nonlinear systems in pure-feedback form

Wang, Min; Shi, Haotian; Wang, Cong; Fu, Jun

Sci China Inf Sci, 2022, 65(2): 122206

Keywords: discrete-time nonlinear systems; pure-feedback systems; learning control; neural networks; persistent excitation

Cite as: Wang M, Shi H T, Wang C, et al. Neural learning control for discrete-time nonlinear systems in pure-feedback form. Sci China Inf Sci, 2022, 65(2): 122206, doi: 10.1007/s11432-020-3138-7

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Harmonic disturbance observer-based sliding mode control of MEMS gyroscopes

Zhang, Rui; Xu, Bin; Wei, Qi; Zhang, Pengchao; Yang, Ting

Sci China Inf Sci, 2022, 65(3): 139201

Keywords: mems gyroscopes; harmonic disturbance observer; global fast terminal sliding mode control; lumped system uncertainty; harmonic disturbance

Cite as: Zhang R, Xu B, Wei Q, et al. Harmonic disturbance observer-based sliding mode control of MEMS gyroscopes. Sci China Inf Sci, 2022, 65(3): 139201, doi: 10.1007/s11432-019-2841-9

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New design of active disturbance rejection control for nonlinear uncertain systems with unknown control input gain

Chen, Sen; Chen, Zhixiang; Huang, Yi; Zhao, Zhi-Liang

Sci China Inf Sci, 2022, 65(4): 142201

Keywords: uncertain system; active disturbance rejection control; control input gain

Cite as: Chen S, Chen Z X, Huang Y, et al. New design of active disturbance rejection control for nonlinear uncertain systems with unknown control input gain. Sci China Inf Sci, 2022, 65(4): 142201, doi: 10.1007/s11432-020-3121-3

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Noncertainty-equivalent observer-based noncooperative target tracking control for unmanned aerial vehicles

Yong, Kenan; Chen, Mou; Wu, Qingxian

Sci China Inf Sci, 2022, 65(5): 152202

Keywords: noncooperative target tracking; unmanned aerial vehicles; noncertainty-equivalent observer; prescribed performance control

Cite as: Yong K N, Chen M, Wu Q X. Noncertainty-equivalent observer-based noncooperative target tracking control for unmanned aerial vehicles. Sci China Inf Sci, 2022, 65(5): 152202, doi: 10.1007/s11432-020-3205-4

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Exponential stabilization of an ODE system with Euler-Bernoulli beam actuator dynamics

Wu, Xiao-Hui; Feng, Hongyinping

Sci China Inf Sci, 2022, 65(5): 159202

Keywords: actuator dynamics compensation; backstepping; euler-bernoulli beam; ode-pde cascade systems; stabilization

Cite as: Wu X-H, Feng H Y P. Exponential stabilization of an ODE system with Euler-Bernoulli beam actuator dynamics. Sci China Inf Sci, 2022, 65(5): 159202, doi: 10.1007/s11432-020-2963-8

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Robust fixed-time output-feedback control for linear systems without chattering: an exact uncertainty compensation method

Shi, Shang; Sun, Yonghui; Hu, Yinlong; Yu, Xin

Sci China Inf Sci, 2022, 65(7): 179201

Keywords: linear system; output feedback; matched uncertainty; fixed-time control; observer

Cite as: Shi S, Sun Y H, Hu Y L, et al. Robust fixed-time output-feedback control for linear systems without chattering: an exact uncertainty compensation method. Sci China Inf Sci, 2022, 65(7): 179201, doi: 10.1007/s11432-020-3086-5

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Robust adaptive H-infinity control for networked uncertain semi-Markov jump nonlinear systems with input quantization

Dong, Shanling; Chen, Guanrong; Liu, Meiqin; Wu, Zheng-Guang

Sci China Inf Sci, 2022, 65(8): 189201

Keywords: h-infinity control; semi-markov jump system; mode-dependent adaptive control; logarithmic quantizer; matched uncertain nonlinearity

Cite as: Dong S L, Chen G R, Liu M Q, et al. Robust adaptive H-infinity control for networked uncertain semi-Markov jump nonlinear systems with input quantization. Sci China Inf Sci, 2022, 65(8): 189201, doi: 10.1007/s11432-020-3187-8

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Model predictive control with input disturbance and guaranteed Lyapunov stability for controller approximation

Wang, Yanye; Li, Shaoyuan; Zheng, Yi

Sci China Inf Sci, 2022, 65(9): 192205

Keywords: model predictive control; Lyapunov-based MPC; control approximation; learning-based control; nonlinear system

Cite as: Wang Y Y, Li S Y, Zheng Y. Model predictive control with input disturbance and guaranteed Lyapunov stability for controller approximation. Sci China Inf Sci, 2022, 65(9): 192205, doi: 10.1007/s11432-021-3338-0

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Observer-based asynchronous self-triggered control for a dynamic positioning ship with the hysteresis input

Zhang, Guoqing; Yao, Mingqi; Shan, Qihe; Zhang, Weidong

Sci China Inf Sci, 2022, 65(11): 212206

Keywords: dynamic positioning ship; self-triggered control; neural networks; hysteresis input; robust control

Cite as: Zhang G Q, Yao M Q, Shan Q H, et al. Observer-based asynchronous self-triggered control for a dynamic positioning ship with the hysteresis input. Sci China Inf Sci, 2022, 65(11): 212206, doi: 10.1007/s11432-021-3496-6

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Static output feedback control for uncertain Roesser-type continuous-time two-dimensional piecewise affine systems

Wang, Meng; Qiu, Jianbin; Yan, Huaicheng; Li, Zhichen; Li, Yue

Sci China Inf Sci, 2022, 65(11): 219204

Keywords: Continuous-time 2-D nonlinear systems; 2-D Roesser T-S fuzzy affine systems; Static output feedback control; Piecewise affine controller; 2-D piecewise Lyapunov functions

Cite as: Wang M, Qiu J B, Yan H C, et al. Static output feedback control for uncertain Roesser-type continuous-time two-dimensional piecewise affine systems. Sci China Inf Sci, 2022, 65(11): 219204, doi: 10.1007/s11432-021-3486-9

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Robust adaptive repetitive control for unknown linear systems with odd-harmonic periodic disturbances

Kurniawan, Edi; Harno, Hendra G.; Wang, Hai; Prakosa, Jalu A.; Sirenden, Bernadus H.; Septanto, Harry; Adinanta, Hendra; Rahmatillah, Akif

Sci China Inf Sci, 2022, 65(12): 222202

Keywords: repetitive control; direct adaptive control; odd-harmonic frequencies; periodic disturbances; unknown linear systems

Cite as: Kurniawan E, Harno H G, Wang H, et al. Robust adaptive repetitive control for unknown linear systems with odd-harmonic periodic disturbances. Sci China Inf Sci, 2022, 65(12): 222202, doi: 10.1007/s11432-022-3561-2

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Stability analysis for semi-Markovian switched stochastic systems with asynchronously impulsive jumps

Mu, Xiaowu; Hu, Zenghui

Sci China Inf Sci, 2021, 64(1): 112206

Keywords: stochastic systems; multiple lyapunov function; almost surely exponential stability; impulsive jumps; semi-markovian switching; renewal process

Cite as: Mu X W, Hu Z H. Stability analysis for semi-Markovian switched stochastic systems with asynchronously impulsive jumps. Sci China Inf Sci, 2021, 64(1): 112206, doi: 10.1007/s11432-019-2726-0

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Stochastic maximum principle for optimal control problems involving delayed systems

Zhang, Feng

Sci China Inf Sci, 2021, 64(1): 119206

Keywords: stochastic optimal control; maximum principle; delayed system; anticipated bsde; linear quadratic problem

Cite as: Zhang F. Stochastic maximum principle for optimal control problems involving delayed systems. Sci China Inf Sci, 2021, 64(1): 119206, doi: 10.1007/s11432-019-2826-3

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Stability for discrete-time uncertain systems with infinite Markov jump and time-delay

Hou, Ting; Liu, Yueying; Deng, Feiqi

Sci China Inf Sci, 2021, 64(5): 152202

Keywords: infinite jump; time-delay; parametric uncertainties; exponential stability in mean square with conditioning; stochastic stability

Cite as: Hou T, Liu Y Y, Deng F Q. Stability for discrete-time uncertain systems with infinite Markov jump and time-delay. Sci China Inf Sci, 2021, 64(5): 152202, doi: 10.1007/s11432-019-2897-9

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Stabilization analysis for Markov jump systems with multiplicative noise and indefinite weight costs

Li, Hongdan; Han, Chunyan; Zhang, Huanshui

Sci China Inf Sci, 2021, 64(5): 152203

Keywords: stabilization; indefinite; multiplicative noise; markov jump linear system

Cite as: Li H D, Han C Y, Zhang H S. Stabilization analysis for Markov jump systems with multiplicative noise and indefinite weight costs. Sci China Inf Sci, 2021, 64(5): 152203, doi: 10.1007/s11432-019-2842-8

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Finite-time asynchronous dissipative filtering of conic-type nonlinear Markov jump systems

Zhang, Xiang; He, Shuping; Stojanovic, Vladimir; Luan, Xiaoli; Liu, Fei

Sci China Inf Sci, 2021, 64(5): 152206

Keywords: dissipative filtering; hidden markov model; finite-time boundedness; markov jump systems; conic-type nonlinearity

Cite as: Zhang X, He S P, Stojanovic V, et al. Finite-time asynchronous dissipative filtering of conic-type nonlinear Markov jump systems. Sci China Inf Sci, 2021, 64(5): 152206, doi: 10.1007/s11432-020-2913-x

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An exact null controllability of stochastic singular systems

Ge, Zhaoqiang; Ge, Xiaochi

Sci China Inf Sci, 2021, 64(7): 179202

Keywords: stochastic system; impulse solution; exact null controllability; ito singular system; stochastic laplace transform

Cite as: Ge Z Q, Ge X C. An exact null controllability of stochastic singular systems. Sci China Inf Sci, 2021, 64(7): 179202, doi: 10.1007/s11432-019-9902-y

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PID control of uncertain nonlinear stochastic systems with state observer

Cong, Xinrong; Zhao, Cheng

Sci China Inf Sci, 2021, 64(9): 192201

Keywords: pid controller; system uncertainty; nonlinear stochastic systems; global stability; state observer

Cite as: Cong X R, Zhao C. PID control of uncertain nonlinear stochastic systems with state observer. Sci China Inf Sci, 2021, 64(9): 192201, doi:

10.1007/s11432-020-2979-0

Special Focus on Control and Analysis for Stochastic Systems

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Fault estimation and fault-tolerant control for linear discrete time-varying stochastic systems

Zhang, Tianliang; Deng, Feiqi; Sun, Yuan; Shi, Peng

Sci China Inf Sci, 2021, 64(10): 200201

Keywords: linear discrete stochastic systems; fault estimation; fault-tolerant control; state transition matrix; exponential stability in mean square

Cite as: Zhang T L, Deng F Q, Sun Y, et al. Fault estimation and fault-tolerant control for linear discrete time-varying stochastic systems. Sci China Inf Sci, 2021,

64(10): 200201, doi: 10.1007/s11432-021-3280-4

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Robust SOF Stackelberg game for stochastic LPV systems

Mukaidani, Hiroaki; Xu, Hua

Sci China Inf Sci, 2021, 64(10): 200202

Keywords: stackelberg games; linear parameter varying stochastic systems; lpv; lpv stochastic systems; cross-coupled matrix equations; ccmes

Cite as: Mukaidani H, Xu H. Robust SOF Stackelberg game for stochastic LPV systems. Sci China Inf Sci, 2021, 64(10): 200202, doi: 10.1007/s11432-021-3302-5

Special Focus on Control and Analysis for Stochastic Systems

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Adaptive state-feedback stabilization of state-constrained stochastic high-order nonlinear systems

Cui, Rongheng; Xie, Xuejun

Sci China Inf Sci, 2021, 64(10): 200203

Keywords: stochastic high-order nonlinear systems; full-state constraints; feasibility conditions; state-feedback stabilization; adaptive control

Cite as: Cui R H, Xie X J. Adaptive state-feedback stabilization of state-constrained stochastic high-order nonlinear systems. Sci China Inf Sci, 2021, 64(10):

200203, doi: 10.1007/s11432-021-3293-0

Special Focus on Control and Analysis for Stochastic Systems

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Event-triggered fault detection for nonlinear discrete-time switched stochastic systems: a convex function method

Jiang, Xiushan; Zhao, Dongya

Sci China Inf Sci, 2021, 64(10): 200204

Keywords: event-triggered scheme; fault detection; convex lyapunov function; discrete-time nonlinear systems; stochastic systems

Cite as: Jiang X S, Zhao D Y. Event-triggered fault detection for nonlinear discrete-time switched stochastic systems: a convex function method. Sci China Inf Sci, 2021, 64(10): 200204, doi: 10.1007/s11432-021-3296-7

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Distributed H_∞ filtering of nonlinear systems with random topology by an event-triggered protocol

Chen, Yun; Zhu, Mengze; Lu, Renquan; Xue, Anke

Sci China Inf Sci, 2021, 64(10): 202204

Keywords: sensor network; distributed h_∞ filtering; one-sided lipschitz condition; event-triggered protocol; random topology

Cite as: Chen Y, Zhu M Z, Lu R Q, et al. Distributed H_∞ filtering of nonlinear systems with random topology by an event-triggered protocol. Sci China Inf Sci, 2021, 64(10): 202204, doi: 10.1007/s11432-020-3072-9

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Exponential stability of stochastic Markovian jump systems with time-varying and distributed delays

Zhao, Xueyan; Deng, Feiqi; Gao, Wenhua

Sci China Inf Sci, 2021, 64(10): 209202

Keywords: stochastic markovian jump systems; exponential stability; distributed delays; time-varying delays; lyapunov function

Cite as: Zhao X Y, Deng F Q, Gao W H. Exponential stability of stochastic Markovian jump systems with time-varying and distributed delays. Sci China Inf Sci, 2021, 64(10): 209202, doi: 10.1007/s11432-018-9800-3

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p th moment exponential stability of general nonlinear discrete-time stochastic systems

Jiang, Xiushan; Tian, Senping; Zhang, Weihai

Sci China Inf Sci, 2021, 64(10): 209204

Keywords: p th moment exponential stability; discrete-time systems; nonlinear stochastic systems; difference operator; smoothness of conditional mathematical expectation

Cite as: Jiang X S, Tian S P, Zhang W H. p th moment exponential stability of general nonlinear discrete-time stochastic systems. Sci China Inf Sci, 2021, 64(10): 209204, doi: 10.1007/s11432-019-9857-5

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On large action space in EV charging scheduling optimization

Jiang, Zhaoyu; Jia, Qing-Shan; Guan, Xiaohong

Sci China Inf Sci, 2022, 65(2): 122201

Keywords: ev; simulation-based policy improvement; large action space; sampling

Cite as: Jiang Z Y, Jia Q-S, Guan X H. On large action space in EV charging scheduling optimization. Sci China Inf Sci, 2022, 65(2): 122201, doi: 10.1007/s11432-020-3106-7

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p th moment D-stability/stabilization of linear discrete-time stochastic systems

Zhang, Huasheng; Xia, Jianwei; Zhang, Yining; Shen, Hao; Wang, Zhen

Sci China Inf Sci, 2022, 65(3): 139202

Keywords: discrete-time stochastic system; p th moment d-stability; generalized h-representation; power vector; lmi region

Cite as: Zhang H S, Xia J W, Zhang Y N, et al. p th moment D-stability/stabilization of linear discrete-time stochastic systems. Sci China Inf Sci, 2022, 65(3): 139202, doi: 10.1007/s11432-019-2843-9

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Robust interval stability/stabilization and H-infinity feedback control for uncertain stochastic Markovian jump systems based on the linear operator

Zhang, Huasheng; Xia, Jianwei; Zhuang, Guangming; Shen, Hao

Sci China Inf Sci, 2022, 65(4): 142202

Keywords: markovian jump systems; linear operator; interval stability; interval stabilization; robust h_{∞} control

Cite as: Zhang H S, Xia J W, Zhuang G M, et al. Robust interval stability/stabilization and H-infinity feedback control for uncertain stochastic Markovian jump systems based on the linear operator. Sci China Inf Sci, 2022, 65(4): 142202, doi: 10.1007/s11432-020-3087-1

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Finite-time boundedness analysis and composite anti-disturbance control for uncertain semi-Markovian jump systems with time delay

Xu, Tianbo; Gao, Xianwen; Qi, Wenhai

Sci China Inf Sci, 2022, 65(4): 149202

Keywords: semi-markovian jump systems; time delay; finite-time boundedness; composite anti-disturbance control; uncertain system

Cite as: Xu T B, Gao X W, Qi W H. Finite-time boundedness analysis and composite anti-disturbance control for uncertain semi-Markovian jump systems with time delay. Sci China Inf Sci, 2022, 65(4): 149202, doi: 10.1007/s11432-019-2879-0

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Practical tracking of MIMO uncertain stochastic systems driven by colored noises via active disturbance rejection control

Lv, Chunwan; Ouyang, Zhengyong; Wu, Zehao; Deng, Feiqi; Xiao, Mingqing

Sci China Inf Sci, 2022, 65(6): 162208

Keywords: uncertain stochastic systems; active disturbance rejection control; extended state observer; tracking; colored noise

Cite as: Lv C W, Ouyang Z Y, Wu Z H, et al. Practical tracking of MIMO uncertain stochastic systems driven by colored noises via active disturbance rejection control. Sci China Inf Sci, 2022, 65(6): 162208, doi: 10.1007/s11432-020-3146-y

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Multicriteria optimization problems of finite horizon stochastic cooperative linear-quadratic difference games

Peng, Chenchen; Zhang, Weihai

Sci China Inf Sci, 2022, 65(7): 172203

Keywords: multicriteria optimization problems; Pareto optimality; cooperative difference games; discrete-time stochastic LQ theory; the difference Riccati equation; the difference Lyapunov equation

Cite as: Peng C C, Zhang W H. Multicriteria optimization problems of finite horizon stochastic cooperative linear-quadratic difference games. Sci China Inf Sci, 2022, 65(7): 172203, doi: 10.1007/s11432-020-3177-8

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Common quantitative characteristics of music melodies — pursuing the constrained entropy maximization casually in composition

Nan, Nan; Guan, Xiaohong; Wang, Yixin; Du, Youtian

Sci China Inf Sci, 2022, 65(7): 174201

Keywords: power law; music melody variations; complementary communitive distribution; entropy; functional optimization

Cite as: Nan N, Guan X H, Wang Y X, et al. Common quantitative characteristics of music melodies — pursuing the constrained entropy maximization casually in composition. Sci China Inf Sci, 2022, 65(7): 174201, doi: 10.1007/s11432-021-3366-4

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Resilient dynamic event-triggered and self-triggered control for Markov jump systems under denial-of-service attacks

Zeng, Pengyu; Deng, Feiqi; Liu, Xiaohua; Zhang, Hongyang

Sci China Inf Sci, 2022, 65(9): 199203

Keywords: markov jump systems; dynamic event-triggering scheme (ets); self-triggering scheme (sts); denial-of-service (dos) attacks; resilient control

Cite as: Zeng P Y, Deng F Q, Liu X H, et al. Resilient dynamic event-triggered and self-triggered control for Markov jump systems under denial-of-service attacks. Sci China Inf Sci, 2022, 65(9): 199203, doi: 10.1007/s11432-020-3186-8

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Observer-based l_2 - l_∞ control for singularly perturbed semi-Markov jump systems with an improved weighted TOD protocol

Shen, Hao; Xing, Mengping; Yan, Huaicheng; Cao, Jinde

Sci China Inf Sci, 2022, 65(9): 199204

Keywords: Markov jump systems; Singularly perturbed systems; semi-Markov jump systems; networked control systems; Robust control; try-once-discard protocol

Cite as: Shen H, Xing M P, Yan H C, et al. Observer-based l_2 - l_∞ control for singularly perturbed semi-Markov jump systems with an improved weighted TOD protocol. Sci China Inf Sci, 2022, 65(9): 199204, doi: 10.1007/s11432-021-3345-1

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Adaptive deep reinforcement learning for non-stationary environments

Zhu, Jin; Wei, Yutong; Kang, Yu; Jiang, Xiaofeng; Dullerud, Geir E.

Sci China Inf Sci, 2022, 65(10): 202204

Keywords: adaptive DRL; non-stationary environment; model uncertainty; exploration and exploitation problem; parameter setting; LDP

Cite as: Zhu J, Wei Y T, Kang Y, et al. Adaptive deep reinforcement learning for non-stationary environments. Sci China Inf Sci, 2022, 65(10): 202204, doi: 10.1007/s11432-021-3347-8

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Group consensus of multi-agent systems with additive noises

Li, Chuanjian; Zong, Xiaofeng

Sci China Inf Sci, 2022, 65(10): 202205

Keywords: group consensus; multi-agent systems; additive noises; pure group consensus; hybrid group consensus

Cite as: Li C J, Zong X F. Group consensus of multi-agent systems with additive noises. Sci China Inf Sci, 2022, 65(10): 202205, doi: 10.1007/s11432-021-3424-x

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Finite-time stabilization of nonlocal Lipschitzian stochastic time-varying nonlinear systems with Markovian switching

Zhao, Gui-Hua; Liu, Shu-Jun

Sci China Inf Sci, 2022, 65(11): 212204

Keywords: stochastic time-varying nonlinear systems; Markovian switching; weak solutions; stochastic finite-time stability; finite-time control

Cite as: Zhao G-H, Liu S-J. Finite-time stabilization of nonlocal Lipschitzian stochastic time-varying nonlinear systems with Markovian switching. Sci China Inf Sci, 2022, 65(11): 212204, doi: 10.1007/s11432-021-3458-9

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Linear-quadratic optimal control for partially observed forward-backward stochastic systems with random jumps

Chen, Tian; Wang, Guangchen; Wu, Zhen

Sci China Inf Sci, 2022, 65(11): 212205

Keywords: LQ optimal control; partially observed stochastic system; random jumps; backward separation principle; optimal filtering

Cite as: Chen T, Wang G C, Wu Z. Linear-quadratic optimal control for partially observed forward-backward stochastic systems with random jumps. Sci China Inf Sci, 2022, 65(11): 212205, doi: 10.1007/s11432-021-3559-3