

An enhanced situational awareness of a mission for an autonomous vehicle by multirate control

Astrov, Igor; Pedai, Andrus Proceedings of the 5th WSEAS International Conference on Dynamical Systems and Control :

CONTROL'09 : La Laguna, Spain, July 1-3, 2009 2009 / p. 33-39

https://www.researchgate.net/publication/228809791_An_enhanced_situational_awareness_of_a_mission_for_an_autonomous_underwater_vehicle_by_multirate_control

An enhanced situational awareness of AUV's mission by multirate neural control

Astrov, Igor; Pikkov, Mihhail World Academy of Science, Engineering and Technology 2012 / p. 91-97 : ill

<https://zenodo.org/records/1335220>

An enhanced situational awareness of AUV's mission by multirate neural control [Electronic resource]

Astrov, Igor; Pikkov, Mihhail ICMOS 2012 CD-ROM Proceedings : [International Conference on Modelling, Optimization and

Simulation (ICMOS 2012), Berlin, Germany, September 19-20, 2012] 2012 / [7 p.] : ill [CD-ROM] <https://zenodo.org/records/1335220>

Comparative analysis of two types of models for multirate linear multivariable discrete-time control systems

Astrov, Igor; Rüstern, Ennu Proceedings of the 13th International Conference "Systems for Automation of Engineering and

Research" (SAER'99) : Varna, Bulgaria, September 18-19, 1999 1999 / p. 44-48

Comparison of single-rate and two-rate neural control approaches for coaxial rotor/ducted-fan TUAV for situational awareness applications

Pedai, Andrus; Astrov, Igor; Udai, Andres 2018 IEEE 16th International Symposium on Intelligent Systems and Informatics (SISY),

13-15 Sept. 2018 : proceedings 2018 / p. 63-68 : ill <http://dx.doi.org/10.1109/SISY.2018.8524720>

Control Multirrádio de Drones Multirrotor Autónomos: Modelización y Simulación

Astrov, Igor 2023 [Control Multirrádio de Drones Multirrotor Autónomos: Modelización y Simulación](#)

Control of hovering manoeuvres in unmanned helicopter for enhanced situational awareness

Astrov, Igor; Pedai, Andrus Proceedings of the 2009 IEEE International Conference on Mechatronics and Automation : August 9-

12, Changchun, China 2009 / p. 143-146 : ill <https://ieeexplore.ieee.org/document/5156580>

Contrôle Multirate des Drones Multirotors Autonomes: Modélisation et Simulation

Astrov, Igor 2023 [Contrôle Multirate des Drones Multirotors Autonomes: Modélisation et Simulation](#)

Controllo multirate di droni multirotori autonomi : modellazione e simulazione

Astrov, Igor 2023 [Controllo Multirate di Droni Multirotori Autonomi: Modellazione e Simulazione](#)

Controlo Multirato de Drones Multirotor Autónomos: Modelação e Simulação

Astrov, Igor 2023 [Controlo Multirato de Drones Multirotor Autónomos: Modelação e Simulação](#)

Decentralization of stochastic multivariable discrete-time control systems on two-rate aggregative subsystems

Astrov, Igor; Rüstern, Ennu Proc. 14th International Conf. Systems for Automation of Engineering and Research 2000 / p. 57-61

Decentralized partitioning and simulation of three-rate stochastic multidimensional continuous-time state-space models

Astrov, Igor; Em, Juri; Pedai, Andrus; Rüstern, Ennu Proc. 4th Portuguese Conference on Automatic Control (CONTROLO'2000)

2000 / p. 226-231

Decentralized partitioning of centralized controller on three-rate subcontrollers for the multidimensional stochastic state-space continuous-time model of an experimental aircraft

Astrov, Igor; Pedai, Andrus; Rüstern, Ennu Proc. 14th International Conf. Systems for Automation of Engineering and Research

2000 / p. 62-66

Decomposition of stochastic multivariable continuous-time control systems in state space on three-rate autonomous subsystems

Astrov, Igor; Em, Juri; Rüstern, Ennu Proceedings of the 12th International Conference on Systems for Automation of Engineering and Research (SAER'98) : 19-20 September 1998, Varna - St. Konstantin resort, Bulgaria 1998 / p. 29-33

Decomposition of stochastic multivariable discrete-time control systems on autonomous subsystems with various rates of transients

Astrov, Igor; Rüstern, Ennu Proceedings of the 12th International Conference on Systems for Automation of Engineering and Research (SAER'98) : 19-20 September 1998, Varna - St. Konstantin resort, Bulgaria 1998 / p. 39-43

Demand and supply chain simulation in telecommunication industry by multi-rate expert systems

Pedai, Andrus; Astrov, Igor Proceedings of World Academy of Science, Engineering and Technology 2008 / p. 268-270 : ill

Demand and supply chain simulation in telecommunication industry by multi-rate expert systems [Electronic resource]

Pedai, Andrus; Astrov, Igor WCSET 2008 CD-ROM proceedings : 2008 World Congress on Science, Engineering and Technology (WCSET 2008, Prague, Czech Republic, July 25-27, 2008) 2008 / p. 268-270 [CD-ROM]

Depth control of an autonomous underwater vehicle in situational awareness a mission [Electronic resource]

Astrov, Igor; Rüstern, Ennu ICROS-SICE 2009 proceedings : ICROS-SICE International Joint Conference 2009 : Fukuoka, Japan, August 18-21, 2009 2009 / p. 560-564 [DVD-ROM]

Depth controls of an autonomous underwater vehicle by neurocontrollers for enhanced situational awareness

Astrov, Igor; Pedai, Andrus Proceedings of the World Academy of Science, Engineering and Technology 2009 / 55, p. 486-489

Depth controls of an autonomous underwater vehicle by neurocontrollers for enhanced situational awareness [Electronic resource]

Astrov, Igor; Pedai, Andrus WCSET 2009 CD-ROM proceedings : International Conference on Marine and Naval Engineering ICMNE 2009. 2009 World Congress on Science, Engineering and Technology : WCSET 2009 : Oslo, Norway, July 29-31, 2009 2009 / p. 486-489 [CD-ROM]

Depth multirate control of an autonomous underwater vehicle for enhanced situational awareness [Electronic resource]

Astrov, Igor; Pedai, Andrus; Rüstern, Ennu RoViSP'09 CD-ROM proceedings : 7th International Conference on Robotics, Vision, Signal Processing and Power Applications "Sustaining Engineers of Tomorrow" : Awana Porto Malai, Langkawi Island, Malaysia, December 19-20, 2009 2009 / [8] p. [CD-ROM]

Design of multirate nonlinear discrete control systems

Astrov, Igor BEC'96 : the 5th Biennial Baltic Electronics Conference, October 7-11, 1996, Tallinn, Estonia : proceedings 1996 / p. 355-358

Design of three-rate continuous-time subcontrollers for the multidimensional stochastic state-space model of an experimental aircraft

Astrov, Igor; Pedai, Andrus; Rüstern, Ennu The 7th Biennial Conference on Electronics and Microsystem Technology "Baltic Electronics Conference" : BEC 2000 : October 8 - 11, 2000, Tallinn, Estonia : conference proceedings 2000 / p. 277-280 : ill

Design of three-rate stochastic multivariable continuous-time control systems

Astrov, Igor; Em, Juri; Rüstern, Ennu BEC'98 : the 6th Biennial Conference on Electronics and Microsystems Technology, October 7-9, 1998, Tallinn, Estonia : proceedings 1998 / p. 325-328: ill

Design of two-rate decentralized linear quadratic regulators for continuous-time stochastic multivariable control systems

Astrov, Igor; Em, Juri; Rüstern, Ennu The 7th Biennial Conference on Electronics and Microsystem Technology "Baltic Electronics Conference" : BEC 2000 : October 8 - 11, 2000, Tallinn, Estonia : conference proceedings 2000 / p. 273-276 : ill

Design of two-rate stochastic multivariable continuous-time control systems: autonomous isolated subsystems with various rates of transients

Astrov, Igor; Em, Juri; Rüstern, Ennu BEC'98 : the 6th Biennial Conference on Electronics and Microsystems Technology, October 7-9, 1998, Tallinn, Estonia : proceedings 1998 / p. 321-324: ill

Design of two-rate stochastic multivariable discrete-time control systems

Astrov, Igor; Rüstern, Ennu The 7th Biennial Conference on Electronics and Microsystem Technology "Baltic Electronics Conference" : BEC 2000 : October 8 - 11, 2000, Tallinn, Estonia : conference proceedings 2000 / p. 79-82 : ill

Desired trajectory generation of a quadrotor helicopter using hybrid control for enhanced situational awareness

Astrov, Igor; Pedai, Andrus; Rüstern, Ennu Proceedings of the 2010 IEEE International Conference on Information and Automation : June 20-23, Harbin, China 2010 / p. 1003-1007 : ill <https://ieeexplore.ieee.org/document/5512295>

Development of artificial intelligence towards singularity

Pedai, Andrus; Astrov, Igor World Academy of Science, Engineering and Technology. Knowledge and innovation engineering 2014 / p. 81

Discrete control in three-rate nonlinear continuous-time systems

Astrov, Igor Abstracts of the 5th International Student Olympiad on Automatic Control (Baltic Olympiad), BOAC'96, October 2-4 1996, Saint-Petersburg, Russia 1996 / p. 19-21

Enhanced situational awareness for autonomous underwater vehicles

Astrov, Igor 2013

Enhanced situational awareness for AUV's stochastic model by multirate neural control

Astrov, Igor; Pedai, Andrus SysCon 2010 Proceedings : 2010 IEEE International Systems Conference (SysCon 2010), San Diego, California, USA, April 5-8, 2010 2010 / p. 66-70 : ill <https://ieeexplore.ieee.org/document/5482465>

Enhancing situational awareness by means of hybrid adaptive neural control of vertical flight in unmanned helicopter [Electronic resource]

Pedai, Andrus; Astrov, Igor ICCAS 2008 CD-ROM proceedings : International Conference on Control, Automation and Systems 2008 (ICCAS 2008, Seoul, Korea, October 14-17, 2008) 2008 / p. 329-332 [CD-ROM] <https://ieeexplore.ieee.org/document/4694666>

Enhancing situational awareness through multirate control of an autonomous underwater vehicle

Astrov, Igor; Pedai, Andrus; Rüstern, Ennu Proceedings of the 2009 IEEE International Conference on Mechatronics and Automation : August 9-12, Changchun, China 2009 / p. 1184-1189 : ill <https://ieeexplore.ieee.org/document/5246459?reload=true&arnumber=5246459>

Enhancing situational awareness through neural regulation of take-off and landing manoeuvres in unmanned helicopter

Astrov, Igor; Pedai, Andrus Recent advances in computational intelligence, man-machine systems and cybernetics : proceedings of 7th WSEAS International Conference on Computational Intelligence, Man-machine Systems and Cybernetics (CIMMACS'08) : Cairo, Egypt, December 29-31, 2008 2008 / p. 29-34
https://www.researchgate.net/publication/228896465_Enhancing_situational_awareness_through_neural_regulation_of_take-off_and_landing_manoeuvres_in_unmanned_helicopter

Experimentally adjusted modelling and simulation technique for a catamaran autonomous surface vessel

Astrov, Igor; Udal, Andres; Mölder, Heigo; Jalakas, Tanel; Möller, Taavi International Conference on Electrical, Computer, and Energy Technologies, ICECET 2022, Prague, Czech Republic, July 20-22, 2022 2022 / 7 p. : ill
<https://doi.org/10.1109/ICECET55527.2022.9873069>

Fingerprint recognition for distorted image applications using three-rate hybrid Kohonen neural network

Astrov, Igor; Tatarly, Sergei; Tatarly, Svetlana; Rüstern, Ennu Mathematical Methods and Computational Techniques in Research and Education : 7th WSEAS International Conference on Wavelet Analysis and Multirate Systems (WAMUS'07) : Arcachon, France, October 13-15, 2007 2007 / p. 122-126 <https://dl.acm.org/doi/abs/10.5555/1974885.1974887>

Fingerprint recognition for varied degrees of image distortion using three-rate hybrid Kohonen neural network

Astrov, Igor; Tatarly, Sergei; Tatarly, Svetlana Proceedings of 2008 International Conference on Audio, Language and Image Processing (ICALIP 2008 : Shanghai, China, July 7-9, 2008). 1 2008 / p. 363-369 <https://ieeexplore.ieee.org/document/4590098>

Flight control of a trirotor mini-UAV for enhanced situational awareness

Astrov, Igor; Pedai, Andrus Proceedings of the World Academy of Science, Engineering and Technology 2010 / p. 271-277 : ill
<https://zenodo.org/records/1060629>

Flight control of a trirotor mini-UAV for enhanced situational awareness [Electronic resource]

Astrov, Igor; Pedai, Andrus ICAAE 2010 CD-ROM Proceedings : International Conference on Aeronautical and Astronautical Engineering : Amsterdam, Netherlands, September 28-29, 2010 2010 / p. 316-322 [CD-ROM]

Flight control of TUAV with coaxial rotor and ducted fan configuration by NARMA-L2 controllers for enhanced situational awareness

Astrov, Igor; Pedai, Andrus; Gordon, Boris World Academy of Science, Engineering and Technology 2012 / p. 75-81 : ill
<https://publications.waset.org/13553/flight-control-of-tuav-with-coaxial-rotor-and-ducted-fan-configuration-by-narma-l2-controllers-for-enhanced-situational-awareness>

Flight control of TUAV with coaxial rotor and ducted fan configuration by NARMA-L2 controllers for enhanced situational awareness [Electronic resource]

Astrov, Igor; Pedai, Andrus; Gordon, Boris ICCEA 2012 CD-ROM Proceedings : [International Conference on Computer Engineering and Applications (ICCEA 2012) : Copenhagen, Denmark, June 11-12, 2012] 2012 / p. 75-81 : ill [CD-ROM]
<https://publications.waset.org/13553/flight-control-of-tuav-with-coaxial-rotor-and-ducted-fan-configuration-by-narma-l2-controllers-for-enhanced-situational-awareness>

Flight control of unmanned rotorcrafts for enhanced situational awareness

Astrov, Igor 2014 https://www.ester.ee/record=b4528435*est

Flight control of vectored thrust aerial vehicle by neural network predictive controller for enhanced situational awareness

Astrov, Igor; Pikkov, Mihhail; Paluoja, Rein World Academy of Science, Engineering and Technology 2013 / p. 77-81 : ill

Flight trajectory control of an eight-rotor UAV for enhanced situational awareness

Astrov, Igor; Pedai, Andrus Recent Researches in System Science : proceedings of the 15th WSEAS International Conference on Systems (part of the 15th WSEAS CISC Multiconference) : Corfu Island, Greece, July 14-16, 2011 2011 / p. 77-82
<http://www.wseas.us/e-library/conferences/2011/Corfu/SYSTEMS/SYSTEMS-10.pdf>

Fuzzy logic control of three-rate decentralized optimal control submodels of the Lockheed L1011 Tristar aircraft

Astrov, Igor; Pedai, Andrus Proceedings of the 5th IEEE International Conference on Intelligent Engineering Systems : Helsinki, 2001 2001 / p. 41-46

Fuzzy logic in simulation of Lockheed L1011 aircraft three-rate model

Astrov, Igor; Rüstern, Ennu IFAC Conference on New Technologies for Computer Control : NTCC 2001 : 19-22 November 2001, Hong Kong : final program and abstracts 2001 / p. 516-521 : ill <https://www.sciencedirect.com/science/article/pii/S1474667017329920>

Kahekiiruselise mitmemõõtmelise diskreetse objekti uurimine : [magistritöö] : õppesuund: arvuti- ja süsteemitehnika

Astrov, Igor 1992 http://www.ester.ee/record=b2676838*est

Low-quality fingerprint recognition using three-rate hybrid Kohonen neural network [Electronic resource]

Astrov, Igor; Tatarly, Sergei; Tatarly, Svetlana; Rüstern, Ennu Proceedings of the 6th International Conference on Information, Communications and Signal Processing : ICICS 2007 : Singapore, December 10-13, 2007 2007 / [5] p. [CD-ROM] <https://ieeexplore.ieee.org/document/4449586>

LQG flight control of VTAV for enhanced situational awareness

Astrov, Igor; Pikkov, Mihhail; Paluoja, Rein World Academy of Science, Engineering and Technology. International journal of mechanical, industrial science and engineering 2013 / p. 981-986 : ill

A model-based adaptive control of an autonomous driving car for lane change maneuver

Astrov, Igor; Udal, Andres; Jaanus, Martin 2021 44th International Convention on Information, Communication and Electronic Technology (MIPRO), September 27 - October 1, 2021, Opatija, Croatia : proceedings 2021 / p. 1330-1335 : ill <http://www.mipro.hr/LinkClick.aspx?fileticket=RAMnkK6T5UQ%3d&tabid=196&language=hr-HR> <https://doi.org/10.23919/MIPRO52101.2021.9597195>

A model-based adaptive control of turning maneuver for catamaran autonomous surface vessel

Astrov, Igor; Astrova, Irina WSEAS Transactions on Systems and Control 2024 / p. 135-142 <https://doi.org/10.37394/23203.2024.19.14> [Journal metrics at Scopus](#) [Article at Scopus](#)

A model-based control of self-driving car trajectory for lanes change maneuver in a smart city

Astrov, Igor WSEAS transactions on systems and control 2023 / art. 36, p. 346-353 : ill <https://doi.org/10.37394/23203.2023.18.36> [Journal metrics at Scopus](#) [Article at Scopus](#)

A model-based LQR control of an obstacle avoidance maneuver of a self-driving car

Astrov, Igor; Udal, Andres; Pikner, Heiko; Malayjerdi, Ehsan 2022 IEEE 20th Jubilee World Symposium on Applied Machine Intelligence and Informatics (SAMI) : Poprad, Slovakia, 2-5 March 2022 2022 / p. 473-478 : ill <https://doi.org/10.1109/SAMI54271.2022.9780755>

A model-based PID control of turning maneuver for catamaran autonomous surface vessel

Astrov, Igor 2023 International Conference on Engineering and Emerging Technologies (ICEET), Istanbul, Türkiye, 2023 2023 / 6 p <https://doi.org/10.1109/ICEET60227.2023.10526157>

Modeling and simulation of multirate control systems for vehicles : practical approach

Astrov, Igor 2012 <https://www.amazon.com/Modeling-Simulation-Multirate-Control-Vehicles/dp/3659281395>

Modeling the trajectory tracking accuracy of an autonomous catamaran patrol vessel under different positional data disturbance conditions

Udal, Andres; Kaugerand, Jaanus; Mölder, Heigo; Astrov, Igor; Bauk, Sanja MT '24 : 10th International Conference on Maritime Transport : Barcelona, Spain, 5-7 June, 2024 2024 / p. 1-15 : ill <https://doi.org/10.5821/mt.13165> <http://hdl.handle.net/2117/409463>

Modelling and simulation of autonomous vehicles and systems and their advanced control methods = Autonoomsete sõidukite ja süsteemide ning nende täiustatud juhtimismetoodikate modelleerimine ja simuleerimine

Pedai, Andrus 2021 https://www.ester.ee/record=b5391357*est <https://digikogu.taltech.ee/et/Item/654ccb12-0d81-4ae2-ae07-11248063913c> <https://doi.org/10.23658/taltech.9/2021>

Modelling and simulation of two-rate state-space models for stochastic multivariable continuous-time control systems

Astrov, Igor; Rüstern, Ennu CSCS-12 : 12th International Conference on Control Systems and Computer Science : proceedings : May 26-29, 1999, Bucharest, Romania. Vol. 1 1999 / p. 103-108

Modelling of multirate multivariable control systems : a state-space approach : thesis submitted to Tallinn Technical University in candidature for the degree of Doctor of Philosophy in Engineering

Astrov, Igor 2000 http://www.ester.ee/record=b1707861*est

Motion control of an autonomous surface vessel for enhanced situational awareness

Astrov, Igor; Pikkov, Mihhail; Paluoja, Rein World Academy of Science, Engineering and Technology. International journal of mechanical, industrial science and engineering 2013 / p. 1203-1208 : ill

Motion control of UAV having eight rotors for enhanced situational awareness

Astrov, Igor; Pedai, Andrus World Academy of Science, Engineering and Technology 2011 / p. 694-701 : ill <https://zenodo.org/records/1070115>

Motion control of vectored thrust aerial vehicle for enhanced situational awareness

Astrov, Igor; Pikkov, Mihhail; Paluoja, Rein Mathematical applications in science and mechanics : [proceedings of the conferences : Dubrovnik, Croatia, June 25-27, 2013] 2013 / p. 59-64 : ill

Motion control of X4-flyer for enhanced situational awareness

Astrov, Igor; Pedai, Andrus Latest trends on systems : 14th WSEAS International Conference on Systems : Greece, July 22-24. Vol. 1 2010 / p. 123-128 : ill https://www.researchgate.net/publication/228503868_Motion_control_of_X4-flyer_for_enhanced_situational_awareness

Multirate approaches for engineering applications : computational strategies

Astrov, Igor 2015 https://www.ester.ee/record=b4533492*est

Multirate Control of Autonomous Multirotor Drones : Modeling and Simulation

Astrov, Igor 2023 https://www.amazon.com/dp/6200646651/ref=sr_1_1?qid=1682616238&refinements=p_27%3Algor+Astrov&s=books&sr=1-1&text=Igor+Astrov

Multirate depth control of an AUV by neural network model reference controller for enhanced situational awareness

Astrov, Igor; Gordon, Boris Recent researches in applied information science : proceedings of the 5th WSEAS World Congress on Applied Computing Conference (ACC '12) : proceedings of the 1st International Conference on Biologically Inspired Computation (BIC '12) : University of Algarve, Faro, Portugal, May 2-4, 2012 2012 / p. 32-37 : ill <http://www.wseas.us/e-library/conferences/2012/Algarve/BICA/BICA-04.pdf>

Multirate depth control of an AUV by neural network model reference controller for enhanced situational awareness [Electronic resource]

Astrov, Igor; Gordon, Boris Proceedings of the International Conferences : Recent Researches in Applied Information Science : [Faro, Portugal, May 2-4, 2012] 2012 / p. 32-37 : ill [CD-ROM] <http://www.wseas.us/e-library/conferences/2012/Algarve/BICA/BICA-04.pdf>

Multirate depth control of an AUV by neural network predictive controller for enhanced situational awareness [Electronic resource]

Astrov, Igor; Pedai, Andrus 5th International Symposium on Computational Intelligence and Intelligent Informatics (ISCII 2011) : Floriana, Malta, September 15-17, 2011 : proceedings 2011 / p. 47-52 [CD-ROM] <https://ieeexplore.ieee.org/document/6069740>

Multirate depth control of an AUV by neurocontroller for enhanced situational awareness

Astrov, Igor; Pedai, Andrus Advances in Computational Intelligence, Man-Machine Systems and Cybernetics 2010 / p. 21-26 : ill https://www.researchgate.net/publication/228917649_Multirate_depth_control_of_an_AUV_by_neurocontroller_for_enhanced_situational_awareness

Multi-rate expert systems in supply chain simulation for telecommunication industry [Electronic resource]

Pedai, Andrus; Astrov, Igor WiCOM 2008 CD-ROM proceedings : 4th International Conference on Wireless Communications, Networking and Mobile Computing (WiCOM 2008) : Dalian, China, October 12-17, 2008 2008 / [4] p. : ill. [CD-ROM]

Multirate neural control for AUV's increased situational awareness during diving tasks using stochastic model

Astrov, Igor; Pedai, Andrus Proceedings of the World Academy of Science, Engineering and Technology 2010 / p. 337-343 : ill https://www.researchgate.net/publication/290764780_Multirate_neural_control_for_AUV's_increased_situational_awareness_during_diving_tasks_using_stochastic_model

Multirate neural control for AUV's increased situational awareness during diving tasks using stochastic model [Electronic resource]

Astrov, Igor; Pedai, Andrus ICMISE 2010 CD-ROM proceedings : International Conference on Machine Intelligence and Systems Engineering : Singapore, December 18-20, 2010 2010 / p. 214-220 [CD-ROM]

Multirate-Steuerung von Autonomen Multirotor-Drohnen : Modellierung und Simulation

Astrov, Igor 2023 <https://www.amazon.com.au/Multirate-Steuerung-von-autonomen-Multirotor-Drohnen-Modellierung/dp/6206026779>

Nanotechnology in military development

Pedai, Andrus; Astrov, Igor World Academy of Science, Engineering and Technology. International journal of chemical, nuclear, materials and metallurgical engineering 2014 / p. 1121-1125 : ill

Neural network control of vehicles : modeling and simulation

Astrov, Igor 2022 <https://doi.org/10.52305/GXGD6357> https://www.ester.ee/record=b5642329*est

Neural network motion control of VTAV by NARMA-L2 controller for enhanced situational awareness

Astrov, Igor; Berezovski, Natalya International journal of computer, electrical, automation, control and information engineering 2015 / p. 1784-1788 : ill <http://scholar.waset.org/1999.4/10001781>

Neural predictive tracking control of catamaran model sailboat for situation awareness applications

Astrov, Igor; Udal, Andres INES 2020 : IEEE 24th International Conference on Intelligent Engineering Systems, July 8-10, 2020, Reykjavik, Iceland : proceedings 2020 / p. 153-158 : ill <https://doi.org/10.1109/INES49302.2020.9147126>

Noisy voice pattern recognition by three-rate hybrid neural network

Astrov, Igor; Tatarly, S.; Tatarly, S. Advances in electrical and computer engineering 2006 / 2, p. 35-38
<https://aece.ro/abstractplus.php?year=2006&number=2&article=7>

An optimal control method for an autonomous surface vessel for environment monitoring and cargo transportation applications

Astrov, Igor; Udal, Andres; Mölder, Heigo 2021 25th International Conference Electronics : Proceedings of the 25th International Conference : ELECTRONICS 2021, Kaunas University of Technology, 14th–16th June, 2021, Palanga, Lithuania 2021 / 6 p
<https://doi.org/10.1109/IEEECONF52705.2021.9467483>

Optimal tracking control of catamaran sailboat model in a smart city

Astrov, Igor Automation, Robotics & Communications for Industry 4.0/5.0 : proceedings of the 4th Winter IFSA Conference on Automation, Robotics & Communications for Industry 4.0/5.0 (ARC' 2024), 7-9 February 2024, Innsbruck, Austria 2024 / p. 78–83 : ill
<https://doi.org/10.13140/RG.2.2.20923.18722>

A private cloud for data mining education

Koschel, Arne; Heine, Felix; **Astrova, Irina; Astrov, Igor** 2018 Sixth International Conference on Enterprise Systems : ES 2018 : 1–2 October 2018, Limassol, Cyprus : proceedings 2018 / p. 129-133 : ill <http://doi.org/10.1109/ES.2018.00027>

Proactive approach to innovation management

Pedai, Andrus; Astrov, Igor World Academy of Science, Engineering and Technology. International journal of social, education, economics and management engineering 2014 / p. 2241-2245 : ill

Processing of blurred image by the two-rate hybrid Kohonen neural network

Astrov, Igor; Tatarlõ, Svetlana; Rüstern, Ennu Proceedings of 2nd IASTED International Multi-Conference on Automation, Control, and Information Technology - Signal and Image Processing 2005 / p. 30-35

Processing of distorted fingerprints with use of three-rate hybrid kohonen neural networks

Astrov, Igor; Tatarly, S.; Tatarly, S.; Rüstern, Ennu Proceedings of the 8th International Conference on Signal Processing : ICSP'06 : Guilin, China, November 16-20, 2006 2006 / p. 2383-2386 <https://ieeexplore.ieee.org/document/4129338>

Processing of distorted fingerprints with use of three-rate hybrid kohonen neural networks [Electronic resource]

Astrov, Igor; Tatarly, S.; Tatarly, S.; Rüstern, Ennu Proceedings of the 8th International Conference on Signal Processing : ICSP'06 : Guilin, China, November 16-20, 2006 2006 / [4] p. [CD-ROM] <https://ieeexplore.ieee.org/document/4129338>

Processing of two-dimensional data with use of two-rate Kohonen's neural networks [Electronic resource]

Astrov, Igor; Tatarlõ, Svetlana; Rüstern, Ennu IEEE Canadian Conference on Electrical and Computer Engineering 2005 / p. 949-952 [CD-ROM] <https://ieeexplore.ieee.org/document/1557133>

RESTfulness of APIs in the wild

Koschel, Arne; Blankschyn, Maximilian; Schulze, Kevin; Schöner, Dominuk; **Astrova, Irina; Astrov, Igor** 2019 IEEE World Congress on Services : IEEE SERVICES 2019, 8–13 July, 2019 Milan, Italy : proceedings 2019 / art. 8817208 ; p. 382-383 : ill
<https://doi.org/10.1109/SERVICES.2019.00114>

Simulating a cyber-attack on an autonomous sea surface vessel's rudder controller

Astrov, Igor; Bauk, Sanja 2024 13th Mediterranean Conference on Embedded Computing, MECO 2024 2024 / 1 p.
<https://journals.scholarsportal.info/browse/26379511>

Simulating a cyber-attack on an autonomous sea surface vessel's rudder controller

Astrov, Igor; Bauk, Sanja 2024 13th Mediterranean Conference on Embedded Computing (MECO), 11-14 June 2024, Budva, Montenegro 2024 / 7 p. : ill <https://doi.org/10.1109/MECO62516.2024.10577872> [Article at Scopus](#) [Article at WOS](#)

Simulating Cyber-Attacks on the Unmanned Sea-Surface Vessel's Rudder Controller

Astrov, Igor; Bauk, Sanja Maritime Cybersecurity 2025 / p. 83-102 https://doi.org/10.1007/978-3-031-87290-7_5

Simulation of missile autopilot with two-rate hybrid neural network system

Astrov, Igor; Tatarly, Sergei; Tatarly, Svetlana Advances in electrical and computer engineering 2007 / 1, p. 18-22 : ill
https://www.researchgate.net/publication/41391566_Simulation_of_Missile_Autopilot_with_Two-Rate_Hybrid_Neural_Network_System

Simulation of neural network and fuzzy logic hybrid control for two-rate stochastic model of an experimental aircraft

Astrov, Igor; Rüstern, Ennu Proceedings of the Asian Simulation Conference - 5th International Conference on System Simulation and Scientific Computing (ICSC 2002), Shanghai, China, November 3-6, 2002. Vol. 2 2002 / p. 852-856

Simulation of noise-cancelling in the cockpit of an aircraft using two-rate hybrid neural network

Astrov, Igor; Tatarly, Sergei; Tatarly, Svetlana Advances in electrical and computer engineering 2007 / 2, p. 7-10
https://www.researchgate.net/publication/41391551_Simulation_of_Noise-Cancelling_in_the_Cockpit_of_an_Aircraft_Using_Two-Rate_Hybrid_Neural_Network

Simulation of three-rate decentralized LQG control for Lockheed L1011 aircraft

Astrov, Igor; Rüstern, Ennu Control and Applications : lasted International Conference 2001 2001 / p. 225-230

Simulation of three-rate neural and neuro-fuzzy hybrid control for the multidimensional stochastic model of a fighter aircraft

Astrov, Igor; Pedai, Andrus; Rüstern, Ennu SCI 2004 : the 8th World Multi-Conference on Systemics, Cybernetics and Informatics : July 18-21, 2004, Orlando, Florida, USA. Vol. 8 : proceedings 2004 / p. 351-356

Simulation of three-rate neural network control for stochastic model of a fighter aircraft

Astrov, Igor CCECE 2003 - Canadian Conference on Electrical and Computer Engineering : Toward a Caring and Humane Technology : May 4th to 7th 2003, Montreal, Canada : proceedings. Vol. 3 2003 / p. 1711-1714 : ill

Simulation of two-rate adaptive hybrid control with neural and neuro-fuzzy networks for stochastic model of an experimental aircraft

Astrov, Igor; Pedai, Andrus; Rüstern, Ennu Proceedings of the International Conference on Cybernetics and Information Technologies, Systems and Applications (CITSA 2004) [and] 10th International Conference on Information System Analysis and Synthesis (ISAS 2004) : Orlando, Florida, USA. Vol. 2 2004 / p. 295-300

Simulation of two-rate adaptive hybrid control with neural and neuro-fuzzy networks for stochastic model of missile autopilot

Astrov, Igor; Pedai, Andrus; Rüstern, Ennu WCICA 2004 : Fifth World Congress on Intelligent Control and Automation : June 15-19, 2004, Hangzhou, China : conference proceedings. Vol. 3 2004 / p. 2603-2607 : ill

Simulation of two-rate adaptive neural network and fuzzy logic hybrid control for stochastic model of an experimental aircraft

Astrov, Igor; Pedai, Andrus; Rüstern, Ennu Canadian Conference on Electrical and Computer Engineering 2004 = Conference canadienne en genie electrique et informatique : May 2-5, 2004, Fallsview Sheraton, Niagara Falls, Canada : proceedings. Vol. 1 2004 / p. 125-128 : ill

Simulation of two-rate hybrid control for nonlinear stochastic model of a diesel engine actuator

Astrov, Igor Advances in electrical and computer engineering : journal of the Faculty of Electrical Engineering, Stefan Cel Mare University, Suceava, Romania 2003 / 1(19), p. 72-83 <https://aece.ro/abstractplus.php?year=2003&number=1&article=12>

Simulation of two-rate hybrid control for stochastic model of missile autopilot

Astrov, Igor; Rüstern, Ennu Proceedings of the International Conference on Computer, Communication and Control Technologies (CCCT'03) : Sheraton World Resort, Orlando, Florida, USA, July 31-August 2, 2003. 3 2003 / p. 150-154

Simulation of two-rate neural network control for stochastic model of an experimental aircraft

Astrov, Igor; Tatarly, S.; Tatarly, S. Advances in electrical and computer engineering 2006 / 1, p. 75-83
<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=33c1d222839a8b7ec32792cb70adc3812139332a>

Simulation of two-rate neural network control for stochastic model of missile autopilot

Astrov, Igor; Tatarly, S.; Tatarly, S. Proceedings of the 6th WSEAS International Conference on Systems Theory and Scientific Computation : ISTASC'06 : Elounda, Agios Nikolaos, Crete Island, Greece, August 18-20, 2006 2006 / p. 169-174
<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=33c1d222839a8b7ec32792cb70adc3812139332a>

Simulation of two-rate neural network control stochastic model of missile autopilot

Astrov, Igor; Tatarly, S.; Tatarly, S. WSEAS transactions on systems 2006 / 11, p. 2536-2541
https://www.researchgate.net/publication/251819350_Simulation_of_Two-Rate_Neural_Network_Control_for_Stochastic_Model_of_Missile_Autopilot

Simulink/MATLAB based comparison of neural and basic tracking control for an autonomous surface vessel for situation awareness applications

Astrov, Igor; Udal, Andres; Pedai, Andrus; Sell, Raivo 2019 IEEE 19th International Symposium on Computational Intelligence and Informatics and 7th IEEE International Conference on Recent Achievements in Mechatronics, Automation, Computer Sciences and Robotics (CINTH-MACRo) 2019 / p. 000105 - 000110 : ill

Single-Rate versus Three-Rate Neural Assisted Control Approaches for Coaxial Rotor Ducted Fan TUAV for Situation Awareness Applications

Pedai, Andrus; Astrov, Igor; Udal, Andres; Sell, Raivo 2019 IEEE International Systems Conference (SysCon 2019), Orlando, FL, USA, April 8-11, 2019 2019 / p. 457-463 : ill <https://doi.org/10.1109/SYSCON.2019.8836871>

Situational awareness based flight control of a drone [Electronic resource]

Astrov, Igor; Pedai, Andrus 2011 IEEE International Systems Conference (SysCon 2011) : Montreal, Quebec, Canada, April 4-7, 2011 : proceedings 2011 / p. 574-578 [CD-ROM] <https://ieeexplore.ieee.org/document/5929033>

Situational awareness based flight control of a four-rotor type UAV

Astrov, Igor; Pedai, Andrus Recent Researches in Automatic Control : 13th WSEAS International Conference on Automatic Control, Modelling and Simulation (ACMOS'11) : Lanzarote, Canary Islands, Spain, May 27-29, 2011 2011 / p. 63-68
https://www.researchgate.net/profile/Andrus-Pedai/publication/228410099_Situational_awareness_based_flight_control_of_a_four-rotor_type_UAV/links/0a85e52e763a72405e000000/Situational-awareness-based-flight-control-of-a-four-rotor-type-UAV.pdf?origin=scientificContributions

Situational awareness based flight control of a three-rotor mini-aircraft

Astrov, Igor; Pedai, Andrus New aspects of automatic control, modelling and simulation 2010 / p. 71-76
https://www.researchgate.net/publication/228415532_Situational_awareness_based_flight_control_of_a_three-rotor_mini-aircraft

Situational awareness based neural flight control of a coaxial rotor/ducted-fan helicopter

Astrov, Igor; Pikkov, Mihhail; Paluoja, Rein Recent advances in systems science : proceedings of the 17th International Conference on Systems (part of CSCC '13) : Rhodes Island, Greece, July 16-19, 2013 2013 / p. 54-59 : ill

Situational awareness based on neural control of an autonomous helicopter during hovering manoeuvres

Astrov, Igor; Pedai, Andrus Proceedings of 5th International Conference on Electrical and Computer Engineering (ICECE 2008) : Dhaka, Bangladesh, December 20-22, 2008 2008 / p. 857-860 <https://ieeexplore.ieee.org/document/4769331>

Target tracking by neural predictive control of autonomous surface vessel for environment monitoring and cargo transportation applications

Astrov, Igor; Udal, Andres; Roasto, Indrek; Mölder, Heigo 2020 17th Biennial Baltic electronics conference, Tallinn, Estonia, October 6-8, 2020 : proceedings 2020 / 4 p <https://doi.org/10.1109/BEC49624.2020.9277115>

The discrete control of two-rate nonlinear multivariable continuous-time systems

Astrov, Igor; Rüstern, Ennu Proceedings of the Estonian Academy of Sciences. Physics. Mathematics 1997 / 3, p. 197-208

The state-space description of two-rate nonlinear multivariable discrete systems

Astrov, Igor; Rüstern, Ennu Proceedings of the Estonian Academy of Sciences. Physics. Mathematics 1997 / 3, p. 187-196

Three-rate neural control of TUAV with coaxial rotor and ducted fan configuration for enhanced situational awareness

Astrov, Igor; Pedai, Andrus 2012 International Conference on Control, Automation and Information Sciences (ICCAIS) : [Ho Chi Minh City, Vietnam, November 26-29, 2012 : proceedings] 2012 / p. 78-83 : ill <https://ieeexplore.ieee.org/document/6466634>

A trajectory control method for a strongly underactuated spherical underwater surveillance robot

Astrov, Igor; Udal, Andres; Mölder, Heigo 2021 IEEE 25th International conference on intelligent engineering systems (INES), 7-9 July 2021 : conference proceedings 2021 / p. 43-48 <https://doi.org/10.1109/INES52918.2021.9512931>

Two-rate aggregative model in state space for a class of nonlinear multivariable stochastic continuous-time control systems

Astrov, Igor; Rüstern, Ennu Proceedings of the 12th International Conference on Systems for Automation of Engineering and Research (SAER'98) : 19-20 September 1998, Varna - St. Konstantin resort, Bulgaria 1998 / p. 34-38

Two-rate LQG control of VTAV for enhanced situational awareness

Astrov, Igor Recent advances in circuits, systems, signal processing and communications : proceedings of the 8th WSEAS International Conference on Circuits, Systems, Signal and Telecommunications (CSST '14) : Tenerife, Spain, January 10-12, 2014 2014 / p. 163-168 : ill

Two-rate motion control of VTAV by NARMA-L2 controller for enhanced situational awareness [Electronic resource]

Astrov, Igor 2016 39th International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO) : May 30-June 3, 2016, Opatija, Croatia : proceedings 2016 / p. 1126-1131 : ill. [CD-ROM]
<https://doi.org/10.1109/MIPRO.2016.7522309>

Two-rate neural control of TUAV with coaxial rotor and ducted fan configuration for enhanced situational awareness

Astrov, Igor; Pedai, Andrus; Gordon, Boris Proceedings of 9th International Conference 2012 ELEKTRO : May 21 - 22, 2012, Žilina-Rajecké Teplice, Slovakia 2012 / p. 159-164 : ill <https://ieeexplore.ieee.org/document/6225630>

Two-rate neural predictive control of coaxial rotor/ducted-fan TUAV for enhanced situational awareness

Astrov, Igor; Berezovski, Natalya; Pikkov, Mihhail; Kimlaychuk, Vadim International Conference on Information Society (i-Society 2015) : London, UK, November 9-11, 2015 2015 / p. 127-132 : ill <http://dx.doi.org/10.1109/i-Society.2015.7366873>

Two-rate neuro-fuzzy hybrid control for model of an experimental aircraft

Astrov, Igor; Rüstern, Ennu Automation, Control and Information Technology : proceedings of the IASTED International Conference : June 10-13, 2002, Novosibirsk, Russia 2002 / p. 180-185

Two-rate state-space continuous-time models for subsystems of stochastic multivariable control systems

Astrov, Igor; Rüstern, Ennu Proceedings of the 13th International Conference "Systems for Automation of Engineering and Research" (SAER'99) : Varna, Bulgaria, September 18-19, 1999 1999 / p. 49-53

Two-rate state-space mathematical models for stochastic multivariable continuous-time control systems and their simulation (MMAR'2000)

Astrov, Igor; Em, Juri; Rüstern, Ennu Proc. 6th International Conf. on Methods and Models in Automation and Robotics 2000 / p. 471-476

Wind force model and adaptive control of catamaran model sailboat

Astrov, Igor; Udal, Andres; Mölder, Heigo; Jalakas, Tanel; Möller, Taavi 2022 8th International Conference on Automation, Robotics and Applications, ICARA 2022 2022 / p. 202-208 : ill <https://doi.org/10.1109/ICARA55094.2022.9738524>

Многоскоростное управление автономными мультироторными дронами : моделирование и имитация

Astrov, Igor 2023 <https://tinyurl.com/2c59zavm>

Научная школа "Математическое и компьютерное имитационное моделирование сложных технических систем управления различных отраслей применения"

Astrov, Igor Ведущие научные школы "Российские научные школы" ; Том XV 2023 / с. 5 <https://s.rae.ru/pdf/rnsh15.pdf>