

Research Achievement 業績リスト

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Publication 学術論文等

International Journal 国際論文誌

45. Kaito Ito, Yu Kawano, **Kenji Kashima**,
“Privacy protection with heavy-tailed noise for linear dynamical systems,”
to appear in *Automatica*
44. Kaito Ito, **Kenji Kashima**, Masakazu Kato, Yoshito Ohta,
“Stochastic model-based assessment of power systems subject to extreme wind power fluctuation,”
SICE Journal of Control, Measurement, and System Integration, Vol. **14**, Issue 1, pp. 67/77, 2021
DOI: 10.1080/18824889.2021.1906017
43. Yu Kawano, **Kenji Kashima**, Ming Cao,
“Modular control under privacy protection: Fundamental trade-offs,”
Automatica, Vol. **127**, 109518, 2021
DOI: 10.1016/j.automatica.2021.109518
42. Kaito Ito, Takuya Ikeda, **Kenji Kashima**,
“Sparse optimal stochastic control,”
Automatica, Vol. **125**, 109438, 2021
DOI: 10.1016/j.automatica.2020.109438
41. Daisuke Iwai*, Hidetoshi Izawa*, **Kenji Kashima***, Tatsuyuki Ueda, Kosuke Sato, (* contributed equally)
“Speeded-up focus control of electrically tunable lens by sparse optimization,”
Scientific Reports, **9**, 12365, 2019
DOI: 10.1038/s41598-019-48900-z

40. Takuya Ikeda, Masaaki Nagahara, **Kenji Kashima**,
 “Maximum hands-off distributed control for consensus of multi-agent systems with sampled-data state observation,”
IEEE Transactions on Control of Network Systems, Vol. **6**, Issue 2, pp. 852/862, 2019
 DOI: 10.1109/TCNS.2018.2880296
39. Takuya Ikeda, **Kenji Kashima**,
 “On sparse optimal control for general linear systems,”
IEEE Transactions on Automatic Control, Vol. **64**, Issue 5, pp. 2077/2083, 2019
 DOI: 10.1109/TAC.2018.2842145
38. **Kenji Kashima**, Hiroki Aoyama, Yoshito Ohta,
 “Stable process approach to analysis of systems under heavy-tailed noise: Modeling and stochastic linearization,”
IEEE Transactions on Automatic Control, Vol. **64**, Issue 4, pp. 1344/1357, 2019
 DOI: 10.1109/TAC.2018.2842145
37. **2019 IEEE CSS Roberto Tempo Best CDC Paper Award**
 Takuya Ikeda, **Kenji Kashima**,
 “Sparsity-constrained controllability maximization with application to time-varying control node selection,”
IEEE Control Systems Letters, Vol. **2**, Issue 3, pp. 321/326, 2018
 DOI: 10.1109/LCSYS.2018.2833621
 Preprint (pdf) at Kyoto University Research Information Repository
36. Naomi Kuze, Daichi Kominami, **Kenji Kashima**, Tomoaki Hashimoto, Masayuki Murata,
 “Self-organizing control mechanism based on collective decision-making for information uncertainty,”
ACM Transactions on Autonomous and Adaptive Systems, vol. **13**, Issue 1, Article No. 7,
 DOI: 10.1145/3183340
35. Naomi Kuze, Daichi Kominami, **Kenji Kashima**, Tomoaki Hashimoto, Masayuki Murata,
 “Hierarchical optimal control method for controlling large-scale self-organizing networks,”
ACM Transactions on Autonomous and Adaptive Systems, vol. **12**, Issue 4, Article No. 22, 2017
 DOI: 10.1145/3124644
34. Jun Tsukamoto, Daisuke Iwai, **Kenji Kashima**,
 “Distributed optimization framework for shadow removal in multi-projection systems,”
Computer Graphics Forum, 2017,
 DOI: 10.1111/cgf.13085
33. Yuta Okumura, **Kenji Kashima**, Yoshito Ohta,
 “Iterative path integral approach to nonlinear stochastic optimal control under compound Poisson noise,”
Asian Journal of Control, Vol. **19**, Issue 2, pp. 781/786, 2017
 DOI: 10.1002/asjc.1402
32. **Kenji Kashima**,
 “Noise response data reveal novel controllability Gramian for nonlinear network dynamics,”
Scientific Reports, **6**, 27300, 2016
 DOI: 10.1038/srep27300
31. Naomi Kuze, Daichi Kominami, **Kenji Kashima**, Tomoaki Hashimoto, Masayuki Murata,
 “Controlling large-scale self-organized networks with lightweight cost for fast adaptation to changing environments,”
ACM Transactions on Autonomous and Adaptive Systems, vol. **11**, Issue 2, Article No. 9, June 2016
 DOI: 10.1145/2856424

30. Jun Tsukamoto, Daisuke Iwai, **Kenji Kashima**,
 “Radiometric compensation for cooperative distributed multi-projection system through 2-DOF distributed control,”
IEEE Transactions on Visualization and Computer Graphics, Vol. **21**, Issue 11, pp. 1221/1229, 2015
 DOI: 10.1109/TVCG.2015.2459905
29. Takayuki Ishizaki, **Kenji Kashima**, Antoine Girard, Jun-ichi Imura, Luonan Chen, Kazuyuki Aihara,
 “Clustered model reduction of positive directed networks,”
Automatica, Vol. **59**, Issue September, pp. 238/247, 2015
 DOI: 10.1016/j.automatica.2015.06.027
28. **Kenji Kashima**, Toshiyuki Ogawa, Tatsunari Sakurai,
 “Selective pattern formation control: Spatial spectrum consensus and Turing instability approach,”
Automatica, Vol. **56**, Issue June, pp. 25/35, 2015
 DOI: 10.1016/j.automatica.2015.03.019
27. Takayuki Ishizaki, Henrik Sandberg, **Kenji Kashima**, Jun-ichi Imura, Kazuyuki Aihara,
 “Dissipativity-preserving model reduction for large-scale distributed control systems,”
IEEE Transactions on Automatic Control, Vol. **60**, Issue 4, pp. 1023/1037, 2015
 DOI: 10.1109/TAC.2014.2370271
26. Masaki Inoue, Jun-ichi Imura, **Kenji Kashima**, Masayasu Suzuki, Kazuyuki Aihara,
 “Absolute instability of Lur’e systems and its application to oscillation analysis of uncertain genetic networks,”
International Journal of Robust and Nonlinear Control, Vol. **25**, Issue 18, pp. 3746/3762, 2014
 DOI: 10.1002/rnc.3294
25. **Kenji Kashima**, Masakazu Kato, Jun-ichi Imura, Kazuyuki Aihara,
 “Probabilistic evaluation of interconnectable capacity for wind power generation,”
European Physics Journal Special Topics (EPJ ST) on “Resilient power grids and extreme events,” 2014
 DOI: 10.1140/epjst/e2014-02276-9
 Preprint (pdf) at Kyoto University Research Information Repository
24. Takayuki Ishizaki, **Kenji Kashima**, Jun-ichi Imura, Kazuyuki Aihara,
 “Model reduction and clusterization of large-scale bidirectional networks,”
IEEE Transactions on Automatic Control, Vol. **59**, Issue 1, pp. 48/63, 2014
 DOI: 10.1109/TAC.2013.2275891
23. Takayuki Ishizaki, **Kenji Kashima**, Jun-ichi Imura, Atsushi Kato, Hiroshi Morita, Kazuyuki Aihara,
 “Distributed parameter modeling and finite-frequency loop-shaping of electromagnetic molding machine,”
Control Engineering Practice, Vol. **21**, Issue 12, pp. 1735/1743, 2013
 DOI: 10.1016/j.conengprac.2013.08.003
22. Caterina Thomaseth, Patrick Marc Weber, Thomas Hamm, **Kenji Kashima**, Nicole Radde,
 “Modeling sphingomyelin synthase 1 driven reaction at the Golgi apparatus can explain data by inclusion of a positive feedback mechanism,”
Journal of Theoretical Biology, Vol. **337**, Issue 11, pp. 174/180, 2013
 DOI: 10.1016/j.jtbi.2013.08.022
21. **Kenji Kashima**, Yutaka Takahashi, Jun-ichi Imura,
 “On the convergence rate of diffusion in the bidirectional Erdős-Rényi networks: an H^2 -norm perspective,”
Physica A, Vol. **392**, Issue 21, pp. 5461/5472, 2013
 DOI: 10.1016/j.physa.2013.05.057

20. Masaki Inoue, Jun-ichi Imura, **Kenji Kashima**, Kazuyuki Aihara,
 “Robust bifurcation analysis of systems with dynamic uncertainties,”
International Journal of Bifurcation and Chaos, Vol. **23**, Issue 9, 1350157, 2013
 DOI: 10.1142/S0218127413501575
19. **Kenji Kashima**, Reiichiro Kawai,
 “On weak approximation of stochastic differential equations through hard bounds by mathematical programming,”
SIAM Journal on Scientific Computing, Vol. **35**, Issue 1, pp. A1/A21, 2013
 DOI: 10.1137/110841497
18. **Kenji Kashima**, Yasuyuki Kawamura, Jun-ichi Imura,
 “Oscillation analysis of linearly coupled piecewise affine systems: application to spatio-temporal neuron dynamics,”
Automatica, Vol. **47**, Issue 6, pp. 1249/1254, 2011
 DOI: 10.1016/j.automatica.2011.02.039
17. **Kenji Kashima**, Reiichiro Kawai,
 “A weak approximation of stochastic differential equations with jumps through tempered polynomial optimization,”
Stochastic Models, Vol. **27**, Issue 1, pp. 26/49, 2011
 DOI: 10.1080/15326349.2011.542721
16. **Kenji Kashima**, Reiichiro Kawai,
 “An optimization approach to weak approximation of stochastic differential equations with jumps,”
Applied Numerical Mathematics, Vol. **61**, Issue 5, pp. 641/650, 2011
 DOI: 10.1016/j.apnum.2010.10.012
15. Jun-ichi Imura, **Kenji Kashima**, Masami Kusano, Tsukasa Ikeda, Tomohiro Morohoshi,
 “Piecewise affine systems approach to control of biological networks,”
Philosophical Transactions of the Royal Society A, Vol. **368**, No. 1930, pp. 4977/4993, 2010
 DOI: 10.1098/rsta.2010.0176
14. **Kenji Kashima**, Jun-ichi Imura,
 “Local stability analysis of heterogeneous equilibrium patterns observed in Delta-Notch interaction,”
Journal of the Chinese Institute of Engineers, Vol. **33**, pp. 347/355, 2010 (invited paper)
13. Takayuki Ishizaki, **Kenji Kashima**, Jun-ichi Imura,
 “Reflection wave suppression in Frenkel-Kontrova model simulation –Analysis based on the GKYP lemma–,”
SICE Journal of Control, Measurement, and System Integration, Vol. **3**, Issue 3, pp. 172/177, 2010
12. Yukihiro Sakai, Hwayeong Yu, **Kenji Kashima**, Jun-ichi Imura,
 “Polynomial optimization approach to stability analysis of boundary controlled 2-dimensional fluid flow,”
SICE Journal of Control, Measurement, and System Integration, Vol. **3**, Issue 1, pp. 20/26, 2010
11. Ravi Gondhalekar, Jun-ichi Imura, **Kenji Kashima**,
 “Controlled invariant feasibility – A general approach to enforcing strong feasibility in MPC applied to move-blocking,”
Automatica, Vol. **45**, Issue 12, pp. 2869/2875, 2009
 DOI: 10.1016/j.automatica.2009.09.020
10. Kazunori Nishio, **Kenji Kashima**, Jun-ichi Imura,
 “Effects of time delay in feedback control of linear quantum systems,”
Physical Review A, **79**, 062105, 2009,
 DOI: 10.1103/PhysRevA.79.062105

9. **Kenji Kashima**, Naoki Yamamoto,
 “Control of quantum systems despite feedback delay,”
IEEE Transactions on Automatic Control, Vol. **54**, Issue 4, pp. 876/880, 2009
 DOI: 10.1109/TAC.2008.2010969
8. **Kenji Kashima**,
 “A new expression for the H^2 performance limit based on state-space representation,”
Automatica, Vol. **45**, Issue 1, pp. 283/290, 2009
 DOI: 10.1016/j.automatica.2008.07.008
7. **Kenji Kashima**, Yutaka Yamamoto,
 “Finite rank criteria for H^∞ control of infinite-dimensional systems,”
IEEE Transactions on Automatic Control, Vol. **53**, Issue 4, pp. 881/893, 2008
 DOI: 10.1109/TAC.2008.920230
6. **Kenji Kashima**, Yutaka Yamamoto,
 “On standard H^∞ control problems for systems with infinitely many unstable poles,”
Systems and Control Letters, Vol. **57**, Issue 4, pp. 309/314, 2008
 DOI: 10.1016/j.sysconle.2007.09.008
5. **Kenji Kashima**, Yutaka Yamamoto, Hitay Özbay,
 “Parameterization of suboptimal solutions of the Nehari problem for infinite-dimensional systems,”
IEEE Transactions on Automatic Control, Vol. **52**, Issue 12, pp. 2369/2374, 2007
 DOI: 10.1109/TAC.2007.910725
4. **Kenji Kashima**, Yutaka Yamamoto,
 “System theory for numerical analysis,”
Automatica, Vol. **43**, Issue 7, pp. 1156/1164, 2007
 DOI: 10.1016/j.automatica.2006.12.028
3. **Kenji Kashima**, Hitay Özbay, Yutaka Yamamoto,
 “A Hamiltonian-based solution to the mixed sensitivity optimization problem for stable pseudorotational plants,”
Systems and Control Letters, Vol. **54**, Issue 11, pp. 1063/1068, 2005
 DOI: 10.1016/j.sysconle.2005.03.002
2. **Kenji Kashima**, Yutaka Yamamoto,
 “A new characterization of invariant subspace of H^2 and applications to the optimal sensitivity problem,”
Systems and Control Letters, Vol. **54**, Issue 6, pp. 539/545, 2005
 DOI: 10.1016/j.sysconle.2004.10.004
1. **Kenji Kashima**, Yutaka Yamamoto, Masaaki Nagahara,
 “Optimal wavelet expansion via sampled-data control theory,”
IEEE Signal Processing Letters, Vol. **11**, Issue 2, pp. 79/82, 2004
 DOI: 10.1109/LSP.2003.821664

Domestic Journal 国内論文誌

21. 伊藤 海斗, 林 輝, 加嶋 健司, 加藤 政一,
 “風力発電連係による擾乱のべき乗則の検証と確率システム解析,”
 計測自動制御学会論文誌, Vol. **54**, Issue 12, pp. 878/885, 2018
 DOI: 10.9746/sicetr.54.878

20. 南 裕樹, 加嶋 健司,
“システムの直列分解に基づく動的量子化器設計,”
計測自動制御学会論文誌, Vol. **52**, Issue 1, pp. 46/51, 2016
DOI: 10.9746/sicetr.52.46
19. 塚本 潤, 岩井 大輔, 加嶋 健司,
“分散最適化にもとづく協調型映像投影システムによる投影色補正,”
日本バーチャルリアリティ学会論文誌, Vol. **20**, Issue 2, pp. 143/150, 2015
18. **2016 年度 計測自動制御学会 論文賞 武田賞**
梅津 佑介, 小川 知之, 加嶋 健司,
“反応拡散系における不安定定在波の選択的安定化,”
計測自動制御学会論文誌, Vol. **51**, Issue 2, pp. 110/119, 2015
DOI: 10.9746/sicetr.51.110
17. 加嶋 健司, 井上 大輔,
“ネットワーク化制御系における確率雑音の白色化効果と非再現性の同時活用,”
計測自動制御学会論文誌, Vol. **50**, Issue 10, pp. 712/720, 2014
DOI: 10.9746/sicetr.50.712
16. 亀本 大貴, 橋本 智昭, 加嶋 健司, 大塚 敏之,
“モデル予測制御に基づいた実時間価格制による電力系統の負荷周波数制御,”
システム制御情報学会論文誌, Vol. **27**, Issue 10, pp. 405/411, 2014
15. **2014 年度 システム制御情報学会 学会賞 論文賞**
井上 正樹, 新井 貴行, 井村 順一, 加嶋 健司, 合原 一幸,
“動的不確かさを含むシステムのロバスト分岐解析—平衡点の安定性変化による局所分岐の場合—,”
システム制御情報学会論文誌, Vol. **26**, Issue 7, pp. 225/231, 2013
14. **2014 年度 システム制御情報学会 学会賞 産業技術賞**
定本 知徳, 加嶋 健司, 森田 洋, 水野 博之,
“射出成形機むけ加熱シリンダの非線形モデリングと低次元化,”
システム制御情報学会論文誌, Vol. **26**, Issue 5, pp. 174/181, 2013
DOI: 10.5687/iscie.26.174
13. **2015 年度 計測自動制御学会 論文賞**
井上 正樹, 鈴木 雅康, 加嶋 健司, 井村 順一, 合原 一幸,
“ルーリエ系の絶対不安定条件,”
計測自動制御学会論文誌, Vol. **49**, Issue 3, pp. 401/407, 2013
12. 石崎 孝幸, 加嶋 健司, 井村 順一, 合原 一幸,
“クラスタ可制御性に基づく動的ネットワークの低次元化,”
計測自動制御学会論文誌, Vol. **48**, Issue 10, pp. 589/598, 2012
11. 織田 知仁, 加嶋 健司, 井村 順一, 宮崎 修司, 森田 洋,
“大規模テプリッツ型方程式に対する定常反復法の制御理論的考察と磁場解析への応用,”
計測自動制御学会論文誌, Vol. **48**, Issue 7, pp. 441/449, 2012
10. **2013 年度 システム制御情報学会 学会賞 論文賞**
加嶋 健司,
“サンプル値 H^2 信号復元にもとづくレビー過程の弱近似,”
システム制御情報学会論文誌, Vol. **24**, Issue 10, pp. 241/249, 2011
9. 石崎 孝幸, 加嶋 健司, 井村 順一,
“単入出力動的ネットワークシステムにおける一次元反応拡散構造の抽出,”
計測自動制御学会論文誌, Vol. **46**, Issue 12, pp. 774/782, 2010

8. 石崎 孝幸, 加嶋 健司, 井村 順一,
“スケール変換を介した連続極限解析による大規模カスケードシステムの低次元化,”
計測自動制御学会論文誌, Vol. **46**, Issue 10, pp. 615/622, 2010
7. 藤井 奨, 裏山 晃史, 加嶋 健司, 井村 順一, 黒川 哲明, 足立 修一,
“鋼材加熱炉の装入スケジューリングと燃焼制御の同時最適化,”
鉄と鋼, Vol. **96**, Issue 7, pp. 434/442, 2010
6. **2010 年度 計測自動制御学会 論文賞**
石崎 孝幸, 加嶋 健司, 井村 順一, 加藤 敦, 森田 洋,
“電磁型締め装置の分布定数モデリングと制御,”
計測自動制御学会論文誌, Vol. **45**, Issue 10, pp. 502/511, 2009
5. 西尾 和記, 加嶋 健司, 井村 順一
“量子ノイズレスサブシステムの大域的安定化,”
計測自動制御学会論文誌, Vol. **45**, Issue 9, pp. 459/468, 2009
4. 加嶋 健司, 西尾 和記,
“状態推定遅延を含む 2 次元量子スピン制御系の安定化,”
計測自動制御学会論文誌, Vol. **44**, Issue 7, pp. 558/565, 2008
3. 加嶋 健司,
“二乗和緩和を用いた遅延存在下の量子スピン制御系設計,”
システム制御情報学会論文誌, Vol. **21**, Issue 4, pp. 111/119, 2008
2. 加嶋 健司, 西尾 和記,
“離散時間系における最適 H^2 制御性能の非最小位相特性による特徴付け,”
計測自動制御学会論文誌, Vol. **43**, Issue 8, pp. 656/662, 2007
1. 加嶋 健司,
“状態空間表現にもとづく H^2 性能限界の解析表現 – 非最小位相特性による最適制御性能の劣化について –, ”
計測自動制御学会論文誌, Vol. **42**, Issue 12, pp. 1328/1335, 2006

Refereed International Conference 査読付き国際会議

87. Takuya Ikeda, **Kenji Kashima**,
“Optimal control node scheduling with multiple sparsity constraints,”
to appear in *24th Int'l Symp. on Mathematical Theory of Networks and Systems (MTNS)*, 2021
86. Kaito Ito, Yu Kawano, **Kenji Kashima**,
“Differentially private mechanisms for linear dynamical systems with heavy-tailed noise,”
to appear in *24th Int'l Symp. on Mathematical Theory of Networks and Systems (MTNS)*, 2021
85. **Kenji Kashima**, Misaki Imai,
“Controllability Gramian of nonlinear Gaussian process state space models with application to model sparsification,”
to appear in *21th IFAC World Congress*, 2020
84. Yu Kawano, **Kenji Kashima**, Ming Cao,
“A fundamental performance limit of cloud-based control in terms of differential privacy level,”
to appear in *21th IFAC World Congress*, 2020
83. Kaito Ito, Takuya Ikeda, **Kenji Kashima**,
“Continuity of the value function for stochastic sparse optimal control,”
to appear in *21th IFAC World Congress*, 2020

82. Takuya Ikeda, Daniel Zelazo, **Kenji Kashima**,
 “Maximum hands-off distributed bearing-based formation control,”
57th IEEE Conf. Decision and Control (CDC), pp. 4459/4464, 2019
 DOI: 10.1109/CDC40024.2019.9029574
81. Shuto Yamada, Kentaro Ohki, **Kenji Kashima**,
 “An event-based quantum error correction via measurement-based feedback control,”
SICE Annual Conf. 2019, pp. xxx/xxx, 2019
 DOI: xxxxxx
80. Takuya Ikeda, **Kenji Kashima**,
 “Sparse optimal feedback control for continuous-time systems,”
2019 European Control Conf. (ECC), pp. 3728/3733, 2019
 DOI: 10.23919/ECC.2019.8796190
79. Takuya Ikeda, **Kenji Kashima**,
 “Sparsity-constrained controllability maximization with application to time-varying control node selection,”
56th IEEE Conf. Decision and Control (CDC), 2018
 DOI: 10.1109/LCSYS.2018.2833621
78. Kaito Ito, **Kenji Kashima**,
 “Theoretical error bounds for stochastic linearization of feedback systems,”
56th IEEE Conf. Decision and Control (CDC), pp. xxx/xxx, 2018
 DOI: 10.1109/CDC.2018.8619319
77. Yuta Ohama, **Kenji Kashima**,
 “A study on model predictive control with transfer entropy costs,”
SICE Annual Conf. 2018, pp. xxx/xxx, 2018
 DOI: xxxxxx
76. Kazuhiro Shimizu, Hayato Nakada, **Kenji Kashima**,
 “Feature extraction of internal dynamics of an engine air path system: Deep autoencoder approach,”
18th IFAC Symposium on System Identification (SYSID 2018), *IFAC-PapersOnLine*, Vol. **51**, Issue 25, pp. 736/741, 2018
 DOI: 10.1016/j.ifacol.2018.09.167
75. Kazuhiro Shimizu, Hayato Nakada, **Kenji Kashima**,
 “Experimental study on sparse modeling of a diesel engine air path system,”
2017 IEEE Conference on Control Technology and Applications (CCTA), pp. 1421/1426, 2017
 DOI: 10.1109/CCTA.2017.8062659
74. Kentaro Ohki, Hideharu Sugihara, **Kenji Kashima**, Yoshito Ohta,
 “Analyzing the effects of transmission line fault on the stochastic model predictive controlled IEEE 30-bus system with uncertain environment,”
2017 IEEE Conference on Control Technology and Applications (CCTA), pp. 1064/0169, 2017
 DOI: 10.1109/CCTA.2017.8062600
73. Yuji Nagasawa, **Kenji Kashima**,
 “Control-oriented denoising autoencoder: Robustified data-driven model reduction,”
20th IFAC World Congress, 2017
 DOI: 10.1016/j.ifacol.2017.08.579
72. Takuya Ikeda, **Kenji Kashima**,
 “Optimal trajectories and state estimation based on sparsity-in-time,”

71. **Kenji Kashima**,
“Nonlinear model reduction by deep autoencoder of noise response data,”
55th IEEE Conf. Decision and Control (CDC), pp. 5750/5755, 2016
DOI: 10.1109/CDC.2016.7799153
70. Takuya Ikeda, Masaaki Nagahara, **Kenji Kashima**,
“Consensus by maximum hands-off distributed control with sampled-data state observation,”
55th IEEE Conf. Decision and Control (CDC), pp. 962/966, 2016
DOI: 10.1109/CDC.2016.7798392
69. Jun Tsukamoto, Daisuke Iwai, **Kenji Kashima**,
“Distributed optimization for shadow removal in spatial augmented reality,”
15th IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2016), pp. 147/148, 2016
68. Yuya Tomisawa, Kentaro Ohki, Hideharu Sugihara, **Kenji Kashima**, Yoshito Ohta,
“Exploitation of uncertain weather forecast data in power network management,”
6th IFAC Workshop on Distributed Estimation and Control in Networked Systems (NecSys’16), 2016
67. Yuki Minami, **Kenji Kashima**,
“Dynamic quantizer design based on serial system decomposition,”
22nd Int’l Symp. on Mathematical Theory of Networks and Systems (MTNS), pp. 577/579, 2016
66. **Kenji Kashima**,
“Optimality of simulation-based nonlinear model reduction: Stochastic controllability perspective,”
2016 American Control Conf. (ACC), pp. 7243/7248, 2016
DOI: 10.1109/ACC.2016.7526816
65. Yuya Tomisawa, Kentaro Ohki, Hideharu Sugihara, **Kenji Kashima**, Yoshito Ohta,
“Power generation scheduling with transmission line thermal constraints: A case study,”
2nd SICE International Symposium on Control Systems 2016, pp. xxx/xxx, 2016
64. **Kenji Kashima**, Hiroki Aoyama, Yoshito Ohta,
“Modeling and linearization of systems under heavy-tailed stochastic noise with application to renewable energy assessment,”
54th IEEE Conf. Decision and Control (CDC), pp. 1852/1857, 2015
DOI: 10.1109/CDC.2015.7402480
63. Yuta Okumura, **Kenji Kashima**, Yoshito Ohta,
“Path integral approach to stochastic optimal control under non-Gaussian white noise,”
Proceedings of the 47th ISCIE International Symposium on Stochastic Systems Theory and Its Applications (SSS’15), pp. 16/19, 2015
62. Naomi Kuze, Daichi Kominami, **Kenji Kashima**, Tomoaki Hashimoto, Masayuki Murata,
“Hierarchical optimal control method for controlling self-organized networks with light-weight cost,”
IEEE GLOBECOM 2015, pp. 1/7, 2015
DOI: 10.1109/GLOCOM.2015.7417665
61. Jun Tsukamoto, Daisuke Iwai, **Kenji Kashima**,
“Radiometric compensation for cooperative distributed multi-projection system through 2-DOF distributed control,”
14th IEEE International Symposium on Mixed and Augmented Reality (ISMAR 2015), pp. 1221/1229, 2015

60. **Kenji Kashima**, Daisuke Inoue,
 “Replay attack detection in control systems with quantized signals,”
2015 European Control Conf. (ECC), pp. 782/787, 2015
 DOI: 10.1109/ECC.2015.7330637
59. **Kenji Kashima**, Yusuke Umezu,
 “Delayed feedback selective pattern formation in reaction-diffusion systems,”
10th Asian Control Conference, pp. 1/6, 2015
58. **Kenji Kashima**, Hiroki Aoyama, Yoshito Ohta,
 “On stochastic linearization of feedback systems driven by stable processes,”
1st SICE International Symposium on Control Systems 2015, pp. xxx/xxx, 2015
57. Takayuki Yoshida, Masakazu Kato, **Kenji Kashima**,
 “Probabilistic evaluation method of interconnectable capacity for wind power generation using actual data,”
International Conference on Renewable Energy and Power Quality Journal (ICREPQ’15), pp. xxx/xxx, 2015
56. Masaki Inoue, Jun-ichi Imura, Takayuki Arai, **Kenji Kashima**, Kazuyuki Aihara,
 “Saddle-node bifurcation and its robustness analysis: A mechanism for inducing pluripotency in stem cell,”
53rd IEEE Conf. Decision and Control (CDC), pp. 5973/5978, 2014
 DOI: 10.1109/CDC.2014.7040324
55. Naomi Kuze, Daichi Kominami, **Kenji Kashima**, Tomoaki Hashimoto, Masayuki Murata,
 “Enhancing convergence with optimal feedback for controlled self-organizing networks,”
IEEE 80th Vehicular Technology Conference (IEEE VTC 2014-fall), pp. 1/7, 2014
 DOI: 10.1109/VTCFall.2014.6965964
54. Yosuke Kotani, Hitoshi Yamao, Masatomo Kishi, **Kenji Kashima**,
 “Output feedback H^∞ preview control of railroad vehicle active suspension,”
SICE Annual Conf. 2014, pp. 1535/1538, 2014
53. Masaki Inoue, Takayuki Arai, Jun-ichi Imura, **Kenji Kashima**, Kazuyuki Aihara
 “Robustness analysis of genetic circuits constructed by bottom-up strategy,”
19th IFAC World Congress, pp. 1736/1741, 2014
52. **Kenji Kashima**, Daisuke Inoue
 “Stationary performance evaluation of control systems with random dither quantization,”
2014 European Control Conf. (ECC), pp. 1625/1630, 2014
51. Masaki Inoue, Takayuki Arai, Jun-ichi Imura, **Kenji Kashima**, Kazuyuki Aihara
 “Robust stability and instability of nonlinear feedback system with uncertainty-dependent equilibrium,”
2014 European Control Conf. (ECC), pp. 1486/1491, 2014
50. Tomonori Sadamoto, **Kenji Kashima**, Morita Hiroshi, Mizuno Hiroyuki,
 “Nonlinear reduced order modeling of plasticization cylinders,”
2014 American Control Conf. (ACC), pp. 129/134, 2014
49. Takayuki Ishizaki, Henrik Sandberg, **Kenji Kashima**, Jun-ichi Imura, Kazuyuki Aihara,
 “Dissipativity-preserving model reduction based on generalized singular perturbation,”
52nd IEEE Conf. Decision and Control (CDC), pp. 5540/5545, 2013

48. Masaki Inoue, Jun-ichi Imura, **Kenji Kashima**, Kazuyuki Aihara,
“Robust bifurcation analysis based on the Nyquist stability criterion,”
52nd IEEE Conf. Decision and Control (CDC), pp. 1768/1773, 2013
47. Yusuke Umezu, **Kenji Kashima**,
“On reduced model for pattern control in a chemotaxis-diffusion-growth system,”
SICE Annual Conf. 2013, pp. xxx/xxx, 2013
46. Takayuki Ishizaki, Henrik Sandberg, Karl Henrik Johansson, **Kenji Kashima**, Jun-ichi Imura, Kazuyuki Aihara,
“Singular perturbation approximation of semistable linear systems,”
2013 European Control Conf. (ECC), pp. 4508/4513, 2013
45. Masaki Inoue, Jun-ichi Imura, **Kenji Kashima**, Takayuki Arai, Kazuyuki Aihara,
“An instability condition for uncertain systems toward robust bifurcation analysis,”
2013 European Control Conf. (ECC), pp. 3264/3269, 2013
44. Masaki Inoue, Jun-ichi Imura, **Kenji Kashima**, Kazuyuki Aihara,
“Instability of uncertain large-scale networks,”
9th Asian Control Conference, 2013
43. **Kenji Kashima**, Toshiyuki Ogawa, Tatsunari Sakurai,
“Feedback stabilization of non-uniform spatial pattern in reaction-diffusion systems,”
2013 American Control Conf. (ACC), pp. 3759/3764, 2013
42. Takayuki Ishizaki, Henrik Sandberg, Karl H. Johansson, **Kenji Kashima**, Jun-ichi Imura, Kazuyuki Aihara,
“Structured model reduction of interconnected linear systems based on singular perturbation,”
2013 American Control Conf. (ACC), pp. 5544/5549, 2013
41. Masaki Inoue, Jun-ichi Imura, **Kenji Kashima**, Kazuyuki Aihara,
“Instability criteria for Lur’e systems toward oscillation analysis of uncertain gene networks,”
2013 American Control Conf. (ACC), pp. 4086/4091, 2013
40. Takayuki Ishizaki, **Kenji Kashima**, Antoine Girard, Jun-ichi Imura, Luonan Chen, Kazuyuki Aihara,
“Clustering-based H^2 -state aggregation of positive networks and its application to reduction of chemical master equation,”
51st IEEE Conf. Decision and Control (CDC), pp. 4175/4180, 2012
39. **Kenji Kashima**, Tomohito Oda, Jun-ichi Imura,
“Control theoretic approach to stationary iterative methods for large-scale Toeplitz-type equations,”
2012 American Control Conf. (ACC), pp. 1500/1506, 2012
38. Takayuki Ishizaki, **Kenji Kashima**, Jun-ichi Imura, Kazuyuki Aihara,
“Model reduction of multi-input dynamical networks based on clusterwise controllability,”
2012 American Control Conf. (ACC), pp. 2301/2306, 2012
37. **Kenji Kashima**, Antonis Papachristodoulou, Frank Allgöwer,
“A linear multi-agent systems approach to diffusively coupled piecewise affine systems: delay robustness,”
50th IEEE Conf. Decision and Control and European Control Conf., pp. 603/608, 2011
36. Takayuki Ishizaki, Yukihiro Sakai, **Kenji Kashima**, Jun-ichi Imura,
“Hierarchical decentralized observer design for linearly coupled network systems,”
50th IEEE Conf. Decision and Control and European Control Conf., pp. 7831/7836, 2011

35. Takayuki Ishizaki, **Kenji Kashima**, Jun-ichi Imura, Kazuyuki Aihara,
“Reaction-diffusion clustering of single-input dynamical networks,”
50th IEEE Conf. Decision and Control and European Control Conf., pp. 7837/7842, 2011
34. **2011 SICE Annual Conference International Award**
Kenji Kashima, Antonis Papachristodoulou, Frank Allgöwer,
“Connection profile robustness in a heterogeneous network of piecewise affine FitzHugh-Nagumo models,”
SICE Annual Conf. 2011, pp. 2093/2098, 2011
33. Tomohito Oda, **Kenji Kashima**, Jun-ichi Imura, Kazuyuki Aihara,
“Iterative method design for Toeplitz-type linear equations: spatially invariant system perspective,”
3rd International Conference on Control and Optimization With Industrial Applications (COIA), 2011
32. Takayuki Ishizaki, **Kenji Kashima**, Jun-ichi Imura, Kazuyuki Aihara,
“Network clustering for SISO linear dynamical networks via reaction-diffusion transformation,”
2011 IFAC World Congress, pp. 5639/5644, 2011
31. Takayuki Ishizaki, **Kenji Kashima**, Jun-ichi Imura, Kazuyuki Aihara,
“Model order reduction for MIMO linear dynamical networks via reaction-diffusion transformation,”
2011 American Control Conf. (ACC), pp. 5019/5024, 2011
30. Takayuki Ishizaki, **Kenji Kashima**, Jun-ichi Imura,
“Extraction of 1-dimensional reaction-diffusion structure in SISO linear dynamical networks,”
49th IEEE Conf. Decision and Control (CDC), pp. 5350/5355, 2010
29. Ahmet Cetinkaya, **Kenji Kashima**, Tomohisa Hayakawa,
“Stability and stabilization of switching stochastic differential equations subject to probabilistic state jumps,”
49th IEEE Conf. Decision and Control (CDC), pp. 2378/2383, 2010
28. Susumu Fujii, Koji Urayama, **Kenji Kashima**, Jun-ichi Imura, Tetsuaki Kurokawa, Shuichi Adachi,
“Machine-based modeling of conveyor-type flowshops with application to scheduling and temperature control in slab reheating furnace,”
2010 IEEE Multi-Conference on Systems and Control (MSC), pp. 2059/2064, 2010
27. Takayuki Ishizaki, **Kenji Kashima**, Jun-ichi Imura, Atushi Katoh, Hiroshi Morita,
“PI control system design for electromagnetic molding machine based on linear programming,”
2010 IEEE Multi-Conference on Systems and Control (MSC), pp. 2415/2420, 2010
26. Takayuki Ishizaki, **Kenji Kashima**, Jun-ichi Imura,
“Distributed parameter modeling and control of electromagnetic molding machine,”
2010 American Control Conf. (ACC), pp. 3512/3517, 2010
25. Ahmet Cetinkaya, **Kenji Kashima**, Tomohisa Hayakawa,
“Stability of stochastic systems with probabilistic mode switching and state jump,”
2010 American Control Conf. (ACC), 4046/4051, 2010
24. **Kenji Kashima**, Reiichiro Kawai,
“An optimization approach to weak approximation of Lévy-driven stochastic differential equations with application to option pricing,”
48th IEEE Conf. Decision and Control (CDC), 3673/3678, 2009
23. Ravi Gondhalekar, Jun-ichi Imura, **Kenji Kashima**,
“Rigorous determination of maximum controlled invariant feasible sets,”
2009 European Control Conf. (ECC), 2821/2826, 2009

22. **Kenji Kashima**, Reiichiro Kawai,
 “Polynomial programming approach to weak approximation of Lévy-driven stochastic differential equations with application to option pricing,”
ICROS-SICE Int’l Joint Conf. 2009 (ICCAS-SICE 2009), 3902/3907, 2009
21. Sompach Kongviwattanakul, **Kenji Kashima**, Jun-ichi Imura,
 “MPC of 2D channel flow via staggered grid,”
ICROS-SICE Int’l Joint Conf. 2009 (ICCAS-SICE 2009), 2144/2149, 2009
20. Gou Nishida, Daiji Ichishima, **Kenji Kashima**, Kenji Fujimoto, Masaki Yamakita, Bernhard Maschke, Ryojun Ikeura,
 “Scaling reduction of port-Hamiltonian systems for numerical calculation,”
ICROS-SICE Int’l Joint Conf. 2009 (ICCAS-SICE 2009), 686/690, 2009
19. Kazunori Nishio, **Kenji Kashima**, Jun-ichi Imura,
 “Global feedback stabilization of quantum noiseless subsystems,”
2009 American Control Conf. (ACC), 1499/1504, 2009
18. Kazunori Nishio, **Kenji Kashima**, Jun-ichi Imura,
 “Optimal control of linear quantum systems despite feedback delay,”
47th IEEE Conf. Decision and Control (CDC), 835/840, 2008
17. Kazunori Nishio, **Kenji Kashima**, Jun-ichi Imura,
 “Optimal control of linear quantum systems despite feedback delay,”
 International Mini-Workshop: Theoretical Foundations and Applications of Quantum Control, 2008
16. Kazunori Nishio, **Kenji Kashima**, Jun-ichi Imura,
 “Feedback control of noiseless subsystems,”
9th Int’l Conf. on Quantum Communication, Measurement and Computing (QCMC), 2008
15. Kazunori Nishio, **Kenji Kashima**, Jun-ichi Imura,
 “Feedback control of noiseless subsystems,”
 The Principles and Applications of Control in Quantum Systems, 2008
14. Hwayeong Yu, **Kenji Kashima**, Jun-ichi Imura,
 “Stability analysis of 2-dimensional fluid flow based on sum of squares relaxation,”
SICE Annual Conf. 2008, 3321/3326, 2008
13. **Kenji Kashima**,
 “Semi-algebraic problem approach for stability analysis of a class of nonlinear stochastic delay system,”
2008 American Control Conf. (ACC), 5258/5263, 2008
12. **Kenji Kashima**, Kazunori Nishio,
 “Global stabilization of two dimensional quantum spin systems despite estimation delay,”
46th IEEE Conf. Decision and Control (CDC), 6352/6357, 2007
11. **Kenji Kashima**,
 “A new expression for the H^2 performance limit based on state-space representation,”
2007 European Control Conf. (ECC), 4474/4479, 2007
10. **Kenji Kashima**, Takashi Yamamoto, Yutaka Yamamoto,
 “A Smith-type predictor for non-minimum phase infinite-dimensional plants and its dual structure,”
45th IEEE Conf. Decision and Control (CDC), 4706/4711, 2006
9. Kazunori Nishio, **Kenji Kashima**,
 “A new expression for the discrete-time H^2 performance limit based on state-space representation,”
SICE-ICCAS Int’l Joint Conf., 3959/3962, 2006

8. **Kenji Kashima**, Yutaka Yamamoto, Hitay Özbay,
 “Parameterization of sub-optimal interpolants for the Nehari problem,”
17th Int’l Symp. on Mathematical Theory of Networks and Systems (MTNS), 1676/1679, 2006
7. **Kenji Kashima**, Yutaka Yamamoto,
 “General solution to standard H^∞ control problems for a class of infinite-dimensional systems,”
Joint 44th IEEE Conf. Decision and Control (CDC) and 2005 European Control Conf. (ECC), 2457/2462, 2005
6. **Kenji Kashima**, Yutaka Yamamoto,
 “On standard H^∞ control problems for systems with infinitely many unstable poles,”
Int’l Workshop on Control of Infinite-dimensional Systems, 2005
5. **Kenji Kashima**, Shinjiro Ashida, Yutaka Yamamoto,
 “System theory for numerical analysis,”
16th IFAC World Congress, We-E09-TO/6, 2005
4. **Kenji Kashima**, Hitay Özbay, Yutaka Yamamoto,
 “Hamiltonian-based solution to the mixed sensitivity problem for stable pseudorotational plants,”
16th Int’l Symp. on Mathematical Theory of Networks and Systems (MTNS), WP5-3, 2004
3. **Kenji Kashima**, Yutaka Yamamoto,
 “Equivalent characterization of invariant subspaces of H^2 and applications to optimal sensitivity problem,”
42nd IEEE Conf. Decision and Control (CDC), 1824/1829, 2003
2. **Kenji Kashima**, Hitay Özbay, Yutaka Yamamoto,
 “On the mixed sensitivity optimization problem for stable pseudorotational plants,”
IFAC Workshop on Time-Delay Systems, TM1-1, 2003
1. **Kenji Kashima**, Yutaka Yamamoto, Masaaki Nagahara,
 “Optimal wavelet expansion via sampled-data control theory,”
40th IEEE Conf. Decision and Control (CDC), 4788/4793, 2001

Book 原著・編著書

4. Hitay Özbay, Suat Gümüşsoy, **Kenji Kashima** and Yutaka Yamamoto, *Frequency Domain Techniques for H^∞ Control of Distributed Parameter Systems*, SIAM, 2018
3. **Kenji Kashima**, Yasuyuki Kawamura and Jun-ichi Imura,
 “Oscillation analysis of linearly coupled PWA systems,”
Proceedings of the 13th ACM International Conference on Hybrid Systems: Computation and Control, HSCC 2010 (ISBN 978-1605589558), K. H. Johansson and W. Yi, Eds. ACM, 2010, pp. 121/130
2. **Kenji Kashima**, Reiichiro Kawai,
 “An optimization approach to weak approximation of Lévy-driven stochastic differential equations,”
Perspectives in Mathematical System Theory, Control, and Signal Processing: A Festschrift in Honor of Yutaka Yamamoto on the Occasion of his 60th Birthday (Lecture Notes in Control and Information Sciences 398, (ISBN 978-3540939177), J. C. Willems, S. Hara, Y. Ohta and H. Fujioka, Eds. Springer, 2010, pp. 263/272
1. 加嶋 健司【ゲストエディタ】 ,
 「ダイナミクスと機械学習の融合に挑む」特集号, 計測と制御, vol. 58, no. 3, 2019

Review Articles 総説・学術資料等

7. 加嶋 健司,
“動的システムにおけるレアイベントモデリングとその応用 —安定分布によるアプローチ,”
IEICE Fundamentals Review, Vol. **14**, Issue 4, pp. 269/278, 2021
DOI: 10.1587/essfr.14.4.269
6. 加嶋 健司,
“総論 機械学習と調和する制御理論を模索して,”
計測と制御, Vol. **58**, Issue 3, pp. 153/155, 2018
DOI: 10.11499/sicejl.58.153
5. 佐々木 智丈, 加嶋 健司,
“制御工学者のための強化学習入門,”
計測と制御, Vol. **58**, Issue 3, pp. 182/188, 2018
DOI: 10.11499/sicejl.58.182
4. 加嶋 健司,
“ディザ量子化制御系の線形解析,”
システム/制御/情報, Vol. **60**, Issue 5, pp. 193/198, 2016
DOI: 10.11509/isciesci.60.5_193
3. 岸田 昌子, 加嶋 健司,
“反応移流拡散系の制御と安定性,”
計測と制御, Vol. **55**, Issue 4, pp. 350/355, 2016
DOI: 10.11499/sicejl.55.350
2. 大木 健太郎, 加嶋 健司,
“確率的な現象とその多様な捉え方,”
計測と制御, Vol. **52**, Issue 4, pp. 348/353, 2013
DOI: 10.11499/sicejl.52.348
1. 加嶋 健司, 河合 玲一郎,
“レビー過程—白色雑音の一般化,”
システム/制御/情報, Vol. **55**, Issue 12, pp. 505/512, 2011
DOI: 10.11509/isciesci.55.12_505

Awards 受賞歴

- 2019. 2019 IEEE CSS Roberto Tempo Best CDC Paper Award
 - 2016. 計測自動制御学会 論文賞 武田賞
 - 2015. 計測自動制御学会 論文賞
 - 2014. システム制御情報学会 学会賞 産業技術賞
 - 2014. システム制御情報学会 学会賞 論文賞
 - 2013. 計測自動制御学会 制御部門大会賞
 - 2012. システム制御情報学会 学会賞 論文賞
 - 2012. 計測自動制御学会 制御部門 パイオニア賞
- 大規模系・分布定数系のシステム制御理論とその応用に関する一連の研究に対して

- 2011. SICE Annual Conference International Award
- 2010. 計測自動制御学会 論文賞
- 2010. Humboldt Research Fellowship for Experienced Researchers - Alexander von Humboldt Foundation (Germany)
Working Title "Control Theoretic Approach to Spatially Distributed Dynamics and Stochasticity in Systems Biology"
- 2008. 計測自動制御学会 制御部門大会賞
- その他
 - － 2012 大阪大学総長奨励賞
 - － 2011 大阪大学総長による表彰
 - － 2007 システム制御情報学会 学会賞奨励賞
 - － 2006 計測自動制御学会 学術奨励賞研究奨励賞

Invited Talks 招待講演

3. **Kenji Kashima**,
"Guided Self-Organization in Engineering and Science,"
Keynote Speech by 2016 SICE Takeda Award Winner, Tsukuba, Japan, 2016
2. **Kenji Kashima**,
"Selective Pattern Formation of Reaction-Diffusion Systems,"
9th Workshop on Control of Distributed Parameter Systems, Beijing, China, 2015
1. **Kenji Kashima**,
"Smith-Predictor type Structure for a Class of Infinite-Dimensional Systems: Optimal Control and Performance Limitation Formula,"
Semi-Plenary Talk in *19th. Int'l Symp. on Mathematical Theory of Networks and Systems (MTNS)*, Budapest, Hungary, 2010
10. **加嶋 健司**,
"機械学習と調和する制御理論,"
第4回 SICE ポストコロナ未来社会ワークショップ人間行動と社会のモデリング, 2020
9. **加嶋 健司**,
"システム制御理論と機械学習,"
情報論的学習理論と機械学習研究会 (IBISML) 第41回研究会, 2020
8. **加嶋 健司**,
"機械学習と調和する制御理論,"
自動車技術会・自動車制御とモデル部門委員会「サイバーフィジカルシステムと人間社会・AI」, 2020
7. **加嶋 健司**,
"大規模ネットワークの可制御性,"
電子情報通信学会 2017 年ソサイエティ大会, 2017

6. 加嶋 健司,
“モデル低次元化の基礎理論と研究動向,”
第 59 回システム制御情報学会研究発表講演会, チュートリアル講演, 大阪, 2015
5. 加嶋 健司,
“線形系の合意形成と反応拡散系におけるパターン形成,”
第 56 回システム制御情報学会研究発表講演会, 招待講演, 京都, 2012
4. 加嶋 健司,
“動的システムの空間構造：均質性とスケーラビリティ,”
第 12 回制御部門大会, パイオニア賞受賞記念講演, 奈良, 2012
3. 加嶋 健司,
“非線形制御理論にもとづく量子制御系の解析・設計,”
動的システムの情報論 (9) 「大自由度非線形系の制御：生体現象を例にして」(統計数理研究所共同研究集会), 東京, 2009
2. 加嶋 健司,
“量子力学系のフィルタリングと制御,”
第 2 回制御理論ワーキングセミナー (計測自動制御学会中部支部主催), 名古屋, 2008
1. 加嶋 健司,
“量子力学系のフィルタリングと制御,”
第 52 回システム制御情報学会研究発表講演会, 招待講演, 京都, 2008