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Curriculum Vitae

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専門分野

ネットワーク科学，制御工学，最適化，確率過程，設計工学

学歴

- テキサス工科大学 Ph.D. (Mathematics), 2014年
- 京都大学 修士（情報学），2009年
- 京都大学 学士（工学），2007年

職歴

- 大阪大学 准教授，2019年11月–
- 奈良先端科学技術大学院大学 助教，2017年3月 – 2019年10月
- ペンシルバニア大学 電気システム工学科 博士研究員，2014年10月 – 2017年2月

短期滞在

- Department of Mechanical Engineering, University of Hong Kong. 2018年, 2019年
- ICTEAM Institute, Université catholique de Louvain, Belgium. 2013年

代表的な受賞

- Runner-up of the 2019 Best Paper Award, *IEEE Transactions on Network Science and Engineering*. 2019年
- 計測自動制御学会 関西支部 支部長賞 奨励賞. 2018年
- 計測自動制御学会 制御部門 制御部門大会賞. 2018年
- Summer Dissertation/Thesis Research Award, Texas Tech University. 2014年
- Cash Family Endowed Fellowship, Texas Tech University. 2013年
- 計測自動制御学会 論文賞. 2012年

研究助成

- 公益財団法人電気通信普及財団 研究調査助成 深層学習を用いた超高精度な行列因子分解 2020年度
- 国立情報学研究所 自由提案公募型共同研究 2019年度
- 国立情報学研究所 自由提案公募型共同研究 2018年度
- 科学研究費 若手研究 2018年度～2020年度 ネットワークにおける伝播の解析と制御：モチーフを活用した多項式時間アルゴリズム
- 科学研究費 基盤研究B 2018年度～2021年度 計測や通信の品質が保証されない環境下での事象トリガ調整型2自由度制御系（代表者 杉本謙二）

研究業績

著書

[1] 永原正章, 岡野訓尚, 小蔵正輝, and 若生将史, ネットワーク化制御. コロナ社, 2019.

著書（**book chapter**）

[1] V. M. Preciado, M. Zargham, C. Nowzari, S. Han, M. Ogura, A. Jadbabaie, and G. J. Pappas, "Bio-inspired Framework for Allocation of Protection Resources in Cyber-Physical Networks," in *Principles of Cyber-Physical Systems*. Cambridge University Press, 2020, pp. 293–322.

[2] M. Ogura and V. M. Preciado, "Optimal Containment of Epidemics in Temporal and Adaptive Networks," in *Temporal Networks Epidemiology*. Springer, 2017, pp. 241–266.

[3] M. Ogura and C. F. Martin, "Linear Switching Systems and Random Products of Matrices," in *Mathematical System Theory – Festschrift in Honor of Uwe Helmke on the Occasion of his Sixtieth Birthday*, K. Hüper and J. Trumpf, Eds. CreateSpace, 2013, pp. 291–300.

招待講演等

[1] "Panel Discussion: What have we learned so far?" *59th IEEE Conference on Decision and Control*, 2020.

[2] "アメリカでの学位取得後の職探し," 海外で活躍する若者たち：コロナを乗り切る留学・就職・長期滞在のノウハウ, 2020.

[3] "感染症×制御工学×ネットワーク," *Multi-Scale Neural Networks Laboratory*，京都大学, 2020.

[4] "社会的距離戦略の数理：ネットワーク科学の観点から," 第1回*SICE*ポストコロナ未来社会ワークショップ, 2020.

[5] "ネットワーク化制御–サイバーフィジカルシステムを理解し，制御するために–," *2020年1月高信頼制御通信研究会*, 2020.

[6] "Optimization of positive linear systems via geometric programming," *Guandong University of Technology*, 2019.

[7] "Optimization of positive linear systems via geometric programming," *Shenzhen University*, 2019.

[8] "ネットワークにおける最適資源配置," ネットワーク科学セミナー*2019*, 2019.

[9] "Synthesis of positive linear systems by geometric programming," *University of Hong Kong*, 2019.

[10] "複雑ネットワークの最適設計：なぜ私がネットワーク科学と制御工学のはざまにいるのか," 足立研セミナー, 2019.

[11] "幾何計画法の制御応用," 電子情報通信学会信号処理研究会, 2019.

[12] "ネットワークにおける確率的伝播モデルの解析と制御," 日本オペレーションズ・リサーチ学会第*279*回待ち行列研究部会, 2018.

[13] "Networked epidemic spreading: modeling, analysis, and control," *National Insitutite of Informatics*, 2018.

[14] "重要人物はだれ？〜つながりを科学する," 生駒市立中学校出前授業, 2018.

[15] "Network epidemiology and control theory," *University of Hong Kong*, 2018.

[16] "テンポラルネットワークの数理モデリング," 第*62*回システム制御情報学会研究発表講演会, 2018.

[17] "じゃんけんでまなぶ複雑ネットワーク," 生駒市立中学校出前授業, 2017.

[18] "伝播の解析と制御：確率微分方程式によるアプローチ," *ERATO*河原林プロジェクト複雑ネットワーク・地図グラフセミナー, 2017.

[19] "How can we "control" spreading processes over complex networks?" 第*4*回数理モデリング研究会, 2017.

[20] "Analysis and control of spreading processes over complex networks," *Washington State University*, 2017.

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[22] "Dynamical systems over time-varying networks," *Tokyo Institute of Technology*, 2015.

[23] "Dynamical systems over time-varying networks," *Workshop on Recent Advances in Systems and Control*, Kyoto University, 2015.

[24] "Stability analysis of switched linear systems with non-traditional switching signals," in *GRASP special seminar*, University of Pennsylvania, 2014.

[25] "Mean stability of switched linear systems," *Université Catholique de Louvain*, 2013.

解説・総説

[1] 小蔵正輝, 岸田昌子, and 林参, "大規模非負システムの幾何計画による最適設計," 計測と制御, vol. 60, no. 1, pp. 59–64, 2021.

[2] 小蔵正輝, "中心性を使った感染症の制御," 経済セミナー, no. 717, pp. 42–46, 2020.

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[13] 今林亘, 韓心又, 小蔵正輝, and 杉本謙二, "フィードバック誤差学習制御におけるフィルタ設計と強正実性の達成," 計測自動制御学会論文集, vol. 56, no. 3, pp. 141–148, 2020.

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[27] M. Ogura and V. M. Preciado, "Stability of spreading processes over time-varying large-scale networks," *IEEE Transactions on Network Science and Engineering*, vol. 3, no. 1, pp. 44–57, 2016. Runner-up of **2019 IEEE TNSE Best Paper Award**.

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[29] M. Ogura and C. F. Martin, "A limit formula for joint spectral radius with p-radius of probability distributions," *Linear Algebra and its Applications*, vol. 458, pp. 605–625, 2014.

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査読付き国際会議論文

[1] M. Ogura, M. Kishida, and J. Lam, "Optimization of positive linear systems via geometric programming," in *24th International Symposium on Mathematical Theory of Networks and Systems* (accepted), 2021.

[2] K. Kobayashi, M. Ogura, T. Kobayashi, and K. Sugimoto, "Deep unfolding-based output feedback control design for linear systems with input saturation," in *SICE International Symposium on Control Systems 2021*, 2021, pp. 2A1–5.

[3] M. Kumazaki, M. Ogura, and T. Tachibana, "Service chain construction with efficient VNF sharing based on model predictive control," in *2020 International Conference on Emerging Technologies for Communications* (accepted), 2020.

[4] K. Sugimoto, M. Ogura, K. Hanada, and T. Aihara, "Sampled-data suboptimal state estimation over lossy networks," in *52nd ISCIE International Symposium on Stochastic Systems Theory and Its Applications*, 2020.

[5] C. Zhao, M. Ogura, and K. Sugimoto, "Finite-time control of discrete-time positive linear systems via convex optimization," in *SICE Annual Conference 2020*, 2020, pp. 1230–1235.

[6] T. Kimura and M. Ogura, "Distributed collaborative 3D-deployment of UAV base stations for on-demand coverage," in *IEEE INFOCOM 2020*, 2020, pp. 1748–1757. Acceptance rate **19.8 percent**.

[7] Y. Abe, M. Ogura, H. Tsuji, A. Miura, and S. Adachi, "Resource and network management for satellite communications systems: a chance-constrained approach," in *IFAC World Congress 2020* (accepted), 2020.

[8] M. Aida, C. Takano, and M. Ogura, "On the fundamental equation of user dynamics and the structure of online social networks," in *NetSci-X 2020*, 2020, pp. 155–170.

[9] M. Ogura, M. Kishida, K. Hayashi, and J. Lam, "Geometric programming for optimizing stability of distributed power control algorithms," in *SICE Annual Conference 2019*, 2019, pp. 679–680.

[10] M. Ogura, W. Mei, and K. Sugimoto, "Upper-bounding dynamics on networked synergistic susceptible-infected-susceptible model," in *SICE Annual Conference 2019*, 2019, pp. 1430–1431.

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[12] M. Ogura, M. Kishida, K. Hayashi, and J. Lam, "Resource allocation for robust stabilization of Foschini-Miljanic Algorithm," in *2019 American Control Conference*, 2019, pp. 4030–4035.

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[14] T. Tadenuma, M. Ogura, and K. Sugimoto, "Sampled-data state observation over lossy networks under round-robin scheduling," in *5th IFAC Conference on Analysis and Control of Chaotic Systems*, 2018, pp. 197–202. **Young Author Award Finalist**.

[15] W. Mei and M. Ogura, "Instability analysis of Markov jump linear systems by spectral optimization," in *SICE Annual Conference 2018*, 2018, pp. 419–422.

[16] M. Ogura, J. Wan, and S. Kasahara, "Model predictive control for energy-efficient operation of data centers with cold aisle containments," in *6th IFAC Conference on Nonlinear Model Predictive Control*, 2018, pp. 241–246.

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教育経験

奈良先端科学技術大学院大学
- 情報科学特別講義 (2018)
- 知能システム制御特論 (2017, 2018)

ペンシルバニア大学
- Convex Optimization in Systems and Control (Co-lecturer, Fall 2015)

テキサス工科大学
- 講師
  - Calculus II (Summer 2014, Spring 2014, Spring 2013)
  - Calculus I (Summer 2013, Fall 2012)
  - Trigonometry (Fall 2011)
  - College Algebra (Fall 2013, Spring 2012)
- ティーチングアシスタント
  - Advanced Calculus (Summer 2012)
  - Linear Algebra (Summer 2012)
  - Higher Mathematics for Engineers and Scientists I (Summer 2011)

京都コンピュータ学院
- 制御工学 (2009, 2009)

- 電気回路 (2008)
- データ構造 (2008)
- 数値解析 (2009, 2010)

京都大学（ティーチング・アシスタント）
- 自然現象と数学 (2009)
- 現代制御論 (2008, 2009)

学会活動

- 2020年〜：Program Committee member, International Conference on Complex Networks and their Applications
- 2020年〜：Associate Editor, Journal of The Franklin Institute
- 2019年度〜：計測自動制御学会 関西支部 庶務幹事
- 2019年〜：計測自動制御学会 制御部門 真なるダイナミクスの追求による次世代システム制御理論調査研究委員会，委員
- 2018年度〜：電子情報通信学会 高信頼制御通信研究会(RCC)，幹事補佐
- 2018年〜：計測自動制御学会 制御部門 IoT時代に向けたイベントベース制御調査研究会，委員
- 2018年：Local Arrangements Vice Chair, SICE Annual Conference 2018
- 2017年〜：International Federation of Automatic Control, Technical Committee 1.5. Networked Systems, Member
- 2015年：5th IFAC Workshop on Distributed Estimation and Control in Networked Systems, Associate Editor