

Journals (peer-reviewed)

- **S. Kucera**, S. Aissa, and S. Yoshida, “Adaptive Channel Allocation for Enabling Target SINR Achievability in Power-controlled Wireless Networks,” *IEEE Transactions on Wireless Communications*, vol. 9, no. 2, pp. 833–843, Feb. 2010.
- **S. Kucera**, S. Aissa, K. Yamamoto, and S. Yoshida, “Asynchronous Distributed Power and Rate Control in Ad Hoc Networks: A Game-Theoretic Approach,” *IEEE Transactions on Wireless Communications*, vol. 7, no. 7, pp. 2536–2548, July 2008.
- **S. Kucera**, K. Yamamoto, and S. Yoshida, “Optimum Practical Design of Distributed and Asynchronous Power Control for Wireless Networks with Shared Bands,” *IEICE Trans. Fundamentals, Special Section on Multi-dimensional Mobile Information Networks*, vol. E90-A, no. 7, pp. 1261–1269, July 2007.

— Pending —

- **S. Kucera** and B. Zhang, “Optimally Selective Medium Access Control for Distributed Power-Controlled Networks with SINR Constraints: A Dominant-Eigenvalue Approach,” submitted to *IEEE Transactions on Wireless Communications*, Jun. 2010.
- **S. Kucera** and B. Zhang, “Robust Algorithms for Medium Sharing in Distributed Networks with Linear Power Control,” submission to *IEEE Transactions on Mobile Computing*, Jul. 2010.

International conferences (peer-reviewed)

- **S. Kucera** and B. Zhang, “Low-Complexity Admission Control for Distributed Power-Controlled Networks With Stochastic Channels,” in *Proc. of IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) 2010*, Istanbul, Turkey, Sep. 26–29 2010.
- **S. Kucera** and B. Zhang, “Simple Distributed Algorithm Using Interference Measurements for Optimum Medium Access in Power-Controlled Networks with SINR Constraints,” in *Proc. of IEEE International Conference on Communications (ICC) 2010*, Cape Town, South Africa, May 23–27 2010.
- **S. Kucera** and B. Zhang, “Predictive Techniques for Enabling Fast and Accurate Medium Access Control in Distributed Power-Controlled Networks,” in *Proc. of IEEE Vehicular Technology Conference (VTC) Spring 2010*, Taipei, Taiwan, May 16–19 2010.
- **S. Kucera** and B. Zhang, “Delay and Robustness Analysis of a Distributed Scheme for Optimized Medium Access in Power-controlled Networks,” in *Proc. of The Fifth IEEE Conference on Mobile Ad-hoc and Sensor Networks (MSN) 2009*, Wu Yi Mountain, China, Dec. 14–16 2009.
- **S. Kucera**, L. Kucera, and B. Zhang, “Optimum Allocation of Energy and Spectrum in Power-Controlled Wireless Networks with QoS Constraints,” in *Proc. of IEEE Global Communications Conference (Globecom) 2009*, Hawaii, USA, Nov. 30–Dec. 4 2009.
- **S. Kucera** and B. Zhang, “An Architecture for Wireless Networks with SINR Constraints and Its Performance Upperbounds,” in *Proc. of IEEE International Conference on Networking and Media Convergence (ICNM) 2009*, Cairo, Egypt, Mar. 24–25 2009.
- **S. Kucera**, S. Aissa, and S. Yoshida, “Stability Emphasizing Cross-Layer Optimization of Transmit Power Allocation in Distributed Wireless Networks,” in *Proc. of IEEE Global Communications Conference (Globecom) 2007*, Washington, D.C., USA, Nov. 26–30 2007.
- **S. Kucera**, S. Aissa, K. Yamamoto, and S. Yoshida, “Asynchronous Distributed Power and Rate Control in Ad Hoc Networks with Stochastic Channels,” in *Proc. of IEEE Wireless Communication and Networking Conference (WCNC) 2007*, Hong Kong, China, Mar. 11–15 2007.
- **S. Kucera**, K. Yamamoto, and S. Yoshida, “Distributed Power Control for Wireless Ad Hoc Networks: A Game-Theoretic Approach Based on Best-Response Functions,” in *Proc. of IEEE Vehicular Technology Conference (VTC) Fall 2006*, Montreal, Canada, Sep. 25–28 2006.
- **S. Kucera**, K. Yamamoto, and S. Yoshida, “A Game-Theoretic Framework for Distributed Power Control in Wireless Ad Hoc Networks,” in *Proc. of IEEE International Symposium on Personal, Indoor and Mobile Radio Communications (PIMRC) 2006*, Istanbul, Turkey, Sep. 1–5 2006.

Indoor and Mobile Radio Communications (PIMRC) 2006, Helsinki, Finland, Sep. 11–14 2006.

- **S. Kucera**, K. Yamamoto, H. Murata, and S. Yoshida, “A Cross-Layer Optimized Architecture with Accelerated Convergence for Cognitive Radio Networks,” in *Proc. of Wireless Personal Multimedia Communications (WPMC) 2007*, Jaipur, India, Dec. 03–06 2007.
- **S. Kucera**, K. Yamamoto, and S. Yoshida, “Best-Response Based Distributed Power Control and Its Convergence To Nash Equilibrium,” in *Proc. of the 4th IEICE Ad hoc networks workshop by IEEE ComSoc Japan Chapter*, Osaka, Japan, Jun. 29–30 2006.
- L. Kucera and **S. Kucera**, “Wireless Communication in Random Geometric Topologies,” in *Lecture Notes in Computer Science Series, Springer Verlag, 2nd International Workshop on Algorithmic Aspects of Wireless Sensor Networks*, held in conjunction with ICALP 2006, Venice, Italy, Jul. 15 2006.

— Pending —

- **S. Kucera** and B. Zhang, “Low-Complexity Admission Control for Distributed Power-Controlled Networks With Stochastic Channels,” submitted to *IEEE PIMRC 2010*, Istanbul, Turkey, Sep. 26–30 2010.

Patents

— Pending —

- **principal inventor** (90%) of “Radio Device and Radio Communication Network Including the Same” 2009/11/26 with *dr. Bing Zhang* (10%)
- **principal inventor** (90%) of “Optimum Medium Access in Power-controlled Wireless Networks Using Sequential Testing of Progressively Increased Target SINR” 2010/04 with *dr. Bing Zhang* (10%)
- **principal inventor** (90%) of “Adaptive Channel Allocation In Wireless Networks With SINR Constraints Using Distributed Pilot Signal Measurements” 2010/04 with *dr. Bing Zhang* (10%)

Local conferences, workshops, technical reports

- **S. Kucera** and B. Zhang, “Fast Self-Organization Techniques for Assuring Quality of Service in Wireless Networks,” in *Proc. of IEICE Society Conference*, Sendai, Japan, Mar. 16–19 2009.
- **S. Kucera** and B. Zhang, “High Performance Admission Control for 2-Dimensional Communication Systems: Principles and Algorithms,” in *Proc. of IEICE Society Conference*, Niigata, Japan, Sep. 15–18 2009.
- **S. Kucera**, K. Yamamoto, H. Murata, and S. Yoshida, “Band Selection Scheme with Power/Rate Control Stability Enhancement in Cognitive Radio Networks,” in *Proc. of IEICE General Conference*, Nagoya, Japan, Mar. 20–23 2007.
- M. Handa, **S. Kucera**, K. Yamamoto, H. Murata, and S. Yoshida, “Study of Media Access Control of Distributed Power Controlled Wireless Ad Hoc Networks,” in *Proc. of IEICE General Conference*, Nagoya, Japan, Mar. 20–23 2007.
- S. Lin, **S. Kucera**, K. Yamamoto, H. Murata, and S. Yoshida, “Stabilization of Distributed Power Control in Wireless Networks with Random Channels by Averaging,” in *Proc. of IEICE General Conference*, Nagoya, Japan, Mar. 20–23 2007.
- **S. Kucera**, K. Yamamoto, and S. Yoshida, “Asynchronous Power and Rate Control Scheme for Wireless Ad Hoc Networks with Fading Channels,” in *Proc. of IEICE Society Conference*, Kanazawa, Japan, Sep. 19–22 2006.
- S. Lin, **S. Kucera**, K. Yamamoto, and S. Yoshida, “Stabilization of Distributed Power Control in

- Fading Channels,” in *Proc. of IEICE Society Conference*, Kanazawa, Japan, Sep. 19–22 2006.
- **S. Kucera**, K. Yamamoto, and S. Yoshida, “Efficient Power Control Scheme for Multihop Radio Networks,” in *Proc. of IEICE General Conference*, Tokyo, Japan, Mar. 24–27 2006.
 - **S. Kucera**, K. Yamamoto, A.-O. Lim, and S. Yoshida, “Interference-Limited Performance Study of Routing Schemes in Unidirectional Multihop Radio Networks,” in *Proc. of IEICE Society Conference*, Sapporo, Japan, Sep. 20–23 2005.
 - **S. Kucera**, K. Yamamoto, H. Murata, and S. Yoshida, “On Practical Design of Power Control Schemes for Distributed Wireless Networks with Shared Bands,” in *IEICE Technical Report, Signal Processing Technical Group*, vol. 106, no. 476, Kunigami, Okinawa, Japan, Jan. 24–26 2007, pp. 91–96.
 - **S. Kucera**, “Game-Theoretic Concepts in Wireless Communications,” in *Annual DELIS Meeting: Subproject 4 - Game Theoretic and Organizational Economics Inspired Approaches*, Prague, Czech Republic, Feb. 9–11 2005.
 - **S. Kucera**, “Cross-Layer Design of Resource Management in Wireless Networks with Distributed Control,” *Kyoto University CUE Magazine*, no. 21, p. 44, Mar. 2009. [Online]. Available: <http://www.s-ee.t.kyoto-u.ac.jp/ja/information/cue/backnumber/cue211.pdf>

Talks

- **S. Kucera**, “Adaptive Medium Access in Distributed Power-controlled Wireless Networks with SINR Constraints: Optimality, Complexity & Delay Performance,” *School of Information Science, Department of Information Science, Computer Systems and Networks, Japan Advanced Institute of Science and Technology*, Ishigawa, Japan, Jan. 25, 2010.
- **S. Kucera**, “Fast Self-organization Techniques for Assuring Quality of Service in Wireless Networks: Novel Optimal and Suboptimal Solutions,” *Advanced Network Architecture Laboratory, Department of Information Networking, Graduate School of Information Science and Technology*, Osaka, Japan, Jan. 12, 2010.
- **S. Kucera**, “Novel Carrier-Sensing Techniques for QoS Satisfaction in Distributed Power-controlled Wireless Networks,” *Yoshida laboratory, Graduate School of Informatics, Kyoto University*, Kyoto, Japan, Nov. 11, 2009.
- **S. Kucera**, “Adaptive Medium Access in Distributed Power-controlled Wireless Networks with SINR Constraints: Optimality, Complexity & Delay Performance,” *Department of Radio Engineering, Faculty of Electrical Engineering, Czech Technical University*, Prague, Czech republic, Nov. 4, 2009.
- **S. Kucera**, “Development of Adaptive Distributed MAC Layer for Power-Controlled Wireless Networks with Shared Channels: Problems and Solutions,” *Department of Smart Networks, Adaptive Communications Research Laboratories, Advanced Telecommunications Research Institute International*, Keihanna Research Park, Japan, Oct. 23, 2009.
- **S. Kucera**, “On Feasibility and Cross-layer Optimality of Energy and Spectrum Allocation in Wireless Networks with Distributed Control,” *NTT DOCOMO Communications Laboratories Europe*, Munich, Germany, Jul. 27, 2008.
- **S. Kucera**, “Cross-layer Optimized Design of Resource Management in Wireless Networks with Distributed Control: A game-theoretic approach,” *Universal City Group, Knowledge Creating Communication Research Center, National Institute of Information and Communications Technology*, Keihanna Research Park, Japan, Jan. 30, 2008.
- K. Yamamoto, **S. Kucera**, “Game-Theoretic Approach for Distributed Adaptive Control in Wireless Networks,” *Tokyo Institute of Technology*, Tokyo, Japan, Jun. 15, 2007.

Theses

- **S. Kucera**, “Cross-layer Design of Resource Management in Wireless Networks with Distributed Control,” *PhD. Thesis at Kyoto University*, Mar. 2008

- **S. Kucera**, “Adaptive Linear MMSE Detectors for Receiving CDMA Signals,” *MSc. Thesis at Czech Technical University*, Feb. 2003 (in Czech)