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Call for Papers for
Symposium on Selected Areas in Communications – Data Storage Track –

Scope and Motivation:

Data storage is the key enabler of the ongoing data revolution. New storage technologies are being developed to support the unprecedented data growth and processing. At the device level, recent advances in emerging data storage technologies, such as non-volatile memories (NVM), bit-patterned media recording (BPMR) and heat-assisted magnetic recording (HAMR) are bound to transform the storage industry. At the system level, massive distributed storage networks, data centers and cloud storage systems require new coding schemes to improve storage efficiency. The unique characteristics of emerging data storage systems offer new challenges in reliability, resource-efficiency and security. Opportunities for fundamental advancements in channel modeling, signal processing and communication algorithms, and in information and coding theory with applications to modern data storage systems abound. This track will be focused on recent theoretical and experimental developments in emerging data storage applications.

Main Topics of Interest:

- Device-level channel modeling and noise characterization for emerging storage and non-volatiles technologies
- Analysis and performance evaluation of novel recording paradigms, timing recovery, equalization, and write pre-compensation techniques
- Information theory and fundamental data transmission limits for new storage channels
- Practical coding methods cognizant of underlying physical constraints (e.g., WOM codes, rank modulation)
- Circuit design for coding, detection, and read/write channels
- Novel and emerging storage media: optical, PCM, MRAM, RRAM, etc.
- Innovative signal processing and decoding algorithms and methods for emerging data memories
- Network coding and communication techniques for cloud storage and distributed storage networks
- Architecture and design of large-scale storage subsystems based on new non-volatile memories
- Security and data compression/deduplication for data centers
- Energy-efficient designs for storage

Sponsoring Technical Committees:

- Data Storage Committee

How to Submit a Paper:

The IEEE Globecom 2014 website provides full instructions on how to submit papers. You will select the desired symposium when submitting. **The paper submission deadline is April 1, 2014. Unlike recent ICC's and Globecom's, this is a hard deadline that will not be extended.**

Symposium Track-Chair:

Lara Dolecek, University of California, Los Angeles (UCLA), USA, dolecek@ee.ucla.edu

Lara Dolecek is an Assistant Professor with the Electrical Engineering Department at the University of California, Los Angeles (UCLA). She holds a B.S. (with honors), M.S. and Ph.D. degrees in Electrical Engineering and Computer Sciences, as well as an M.A. degree in Statistics, all from the University of California, Berkeley. She received the 2007 David J. Sakrison Memorial Prize for the most outstanding doctoral research in the Department of Electrical Engineering and Computer Sciences at UC Berkeley. Prior to joining UCLA, she was a postdoctoral researcher with the Laboratory for Information and Decision Systems at the Massachusetts Institute of Technology. She received Northrop Grumman Excellence in Teaching Award from UCLA, Intel Early Career Faculty Award, University of California Faculty Development Award, all in 2013, Okawa Research Grant all in 2012, NSF CAREER Award in 2012, and Hellman Fellowship Award in 2011. She is an Associate Editor for Coding Theory for IEEE Transactions on Communications and for IEEE Communication Letters and is the lead guest editor for JSAC special issue on emerging data storage. Her research interests span coding and information theory, graphical models, statistical algorithms, and computational methods, with applications to emerging systems for data storage, processing, and communication.