
# CALL FOR PAPERS

The 2011 IEEE Global Communications Conference (GLOBECOM) will be held in Houston, Texas, USA, during 5 – 9 December 2011. Themed "Energizing Global Communications," the conference will feature 12 Specific Symposia, Tutorials, Workshops and the Industrial Forum and Exhibition. Prospective authors are invited to submit original technical papers for oral or poster presentations at IEEE GLOBECOM 2011 and publication in the Conference Proceedings. To be published in the IEEE GLOBECOM 2011 Conference Proceedings and IEEE Xplore®, an author of an accepted paper is required to register for the conference at the full or limited (member or non-member) rate and the paper must be presented at the conference. Non-refundable registration fees must be paid prior to uploading the final IEEE formatted, publication-ready version of the paper. For authors with multiple accepted papers, one full registration is valid for up to 3 papers. Accepted papers will be published in the IEEE GLOBECOM 2011 Conference Proceedings. Accepted and presented papers will be published in the IEEE GLOBECOM 2011 Conference Proceedings and in IEEE Xplore®.

## Data Storage Track - Selected Areas in Communications Symposium

**Technical Program Committee**

| | |
|---|---|
| Alex Dimakis, | USC (Chair) |
| J. R. Cruz, | University of Oklahoma |
| Lara Dolecek, | UC Los Angeles |
| Mehmet Fatih Erden, | Seagate Technology |
| Warren Gross, | McGill University |
| Anxiao (Andrew) Jiang, | Texas A&M University, |
| Alek Kavcic, | University of Hawaii |
| P. Vijay Kumar, | IISc |
| Tiffany Jing Li, | Lehigh University |
| Luis Lastras-Montano, | IBM T.J. Watson Center |
| George Mathew, | LSI Corporation |
| Sedat Olcer, | IBM Zurich, Switzerland |
| Henry D. Pfister, | Texas A&M University |
| Aditya Ramamoorthy, | Iowa State University |
| Kannan Ramchandran, | UC Berkeley |
| Paul H. Siegel, | UC San Diego |
| Bane Vasic, | University of Arizona |
| Haitao (Tony) Xia, | LSI Corporation |

**Paper Submission: 1 March 2011**

**Scope and Motivation**

Signal processing and coding have been key components of data storage systems in the past (e.g. disk drives, tape recording, DVD players). Coding and signal processing methods in data storage are unique in the sense that they need to be tailor-made to address issues specific to each storage system. In addition, two recent technological developments pose new challenges in coding and signal processing for storage.

1. **Distributed Cloud storage:**
Massive farms of computer servers are an indispensable component of the information age, becoming the next computing platform for the Internet. The problem of storing massive amounts of information, distributed over a network, is significant and challenging. Recently techniques from coding theory and network coding have been shown to have significant potential for cloud storage over distributed networks.

2. **Emerging Memory Technologies:**
The emergence of newer memory technologies such as flash and PCM, have generated significant research interest for the development of communication theory. The signal processing and information-theoretic tools developed for the communication channel bear significant similarities to those that have been applied successfully to data storage devices. These techniques are now finding applicability for EMT problems such as flash storage.

**Main Topics of Interest**

1. Characterization of data storage channels and noise phenomena
2. Information theory for storage systems and distributed storage networks
3. Network coding techniques for distributed storage
4. Design of error correction codes for storage channels and networks
5. Performance evaluation and system reliability of storage networks
6. Signal processing techniques and implementations of read/write channels
7. Iterative decoding algorithms for data storage, such as LDPC codes, turbo equalization
8. Coding and Information theoretic techniques for cloud storage security
9. Coding and signal processing for non-volatile memories such as flash and PCM media
10. Applications to other EMTs, e.g. , MRAM, STT-MRAM, and RRAMs