

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

Scope and Motivation:

Data storage systems are among the main drivers of the information technology revolution that has transformed human society over the last few decades. Today, the amount of data that needs to be stored still grows unabated, fueling the need for ever efficient and powerful technologies to store and manage digital data.

The invention of novel memory technologies as well as the advancement of more traditional ones, the emergence of massive distributed data storage networks, the multiplication of cloud storage services, the proliferation of data centers as well as the associated needs for system-level design and optimization pose a whole range of new scientific and engineering challenges, both from a hardware and a software/application perspectives. Efficiency, security, reliability and stability of storage systems turn out to represent critical design aspects of such systems. To address this large array of problems, new solutions need to be developed in many fields of engineering science concurrently, such as information theory and coding, communication theory, algorithmic design, channel modeling, signal processing, security, etc.

Main Topics of Interest:

To ensure complete coverage of the advances in data storage for the current and future systems, the Data Storage Track cordially invites original contributions in, but not limited to, the following topical areas:

- Novel and emerging storage media: NAND Flash, PCM, MRAM, RRAM, HAMR, memristor based memories, etc.
- Device-level channel modeling, including modeling of media noise and non-linearity, for emerging storage technologies
- Information theory and fundamental data transmission limits for new storage channels
- Code design, coding bounds, decoding algorithms for storage applications
- Compression for data storage
- Signal processing algorithms and methods for emerging data memories
- New detection, equalization, and filtering algorithms for data storage systems
- Novel approaches for timing recovery, equalization, gain control, precompensation, etc. for storage channels

- Circuit design for coding, detection, and read/write channels
- Network coding and communication techniques for cloud storage and distributed storage networks
- Fault tolerance and coding techniques for disk arrays and data centers
- Architecture and design of large-scale storage subsystems based on new non-volatile memories
- Security and data compression/deduplication for data centers
- New concepts for cloud-storage systems, data centers, and massive distributed storage networks

Sponsoring Technical Committee:

- Data Storage Technical Committee
(<http://committees.comsoc.org/dstc/index.php?page=cfp-gc2016>)

How to Submit a Paper:

The IEEE Globecom 2016 website provides full instructions on how to submit papers. You will select the desired symposium when submitting. **The paper submission deadline has been extended to April 15, 2016.**

Symposium Track-Chair:

Sedat Ölçer, Istanbul Bilgi University, Istanbul, Turkey (sedat.olcer@bilgi.edu.tr).



Sedat Ölçer received a Diploma of electrical engineering and a Ph.D. degree from the Swiss Federal Institute of Technology, Lausanne (EPFL), Switzerland, in 1978 and 1982, respectively. From 1982 to 1984, he was a research associate at the Information Systems Laboratory of the Stanford University, Stanford, CA, and at Yale University, New Haven, CT. In 1984, he joined the IBM Zurich Research Laboratory, Rueschlikon, Switzerland, where he worked on many projects in digital communications, signal processing and coding, with applications to digital magnetic recording channels, and high-speed



data communications for local area networking and network access. He participated and contributed to the work of several standards bodies and served as chair and co-chair for many conferences. He was guest editor of the IEEE Journal on Selected Areas in Communications, IEEE Communications Magazine, Computer Networks, and a Technical Editor of the IEEE Communications Magazine. He was Distinguished Lecturer of the IEEE Communications Society and a co-recipient of the 2003 Leonard G. Abraham Prize Paper Award. He was named an IEEE Fellow in Nov. 2005. Dr. Ölçer joined the Department of Electrical Engineering of the Istanbul Bilgi University, Turkey, in 2012. He is now Professor and Head of the Department of Computer Engineering as well as the director of the Graduate School of Natural and Applied Sciences at Bilgi University.