





CoSeRa 2012

Ist International Workshop on Compressed Sensing Applied to Radar I4.-I6. May 2012, Bonn, Germany

Radar/SAR awaits Compressed Sensing

Compressed sensing (CS) techniques offer a framework for the detection and allocation of sparse signals with a reduced number of samples. Today, modern radar systems operate with high bandwidths - demanding high sample rates according to the Shannon-Nyquist theorem - and a huge number of single elements for phased array antennas. Often only a small amount of target parameters is the final output, raising the question, whether CS could be a good means to reduce data size, complexity, weight, power consumption and costs of radar systems. The amount of publications addressing the application of CS to radar is still limited, leaving open a number of questions.

Scope

The scope of the proposed International Workshop is to bring experts of Compressed Sensing together to explore the state-of-the-art in development of such techniques in the different nations and for the different applications and to turn out its advantages or possible drawbacks compared to classical solutions. The workshop program will include invited presentations from distinguished experts as well as contributed talks.

Keynote Speakers

- · Gilda Schirinzi, University of Naples, Italy
- Thomas Strohmer, University of California, USA

Key aspects

Contributions are expected on, but not limited to:

- CS for pulse compression
- CS for synthetic aperture radar (SAR)
- CS for SAR tomography
- CS for active and passive airspace surveillance
- CS for moving target detection
- CS for radar clutter suppression
- CS for MIMO architectures
- Hardware aspects of CS
- CS for radiometry and sonar
- Mathematical aspects of CS in radar
- CS in statistical signal processing

Participants

The workshop will provide a forum for experts, research engineers, and scientists working in the area of Compressive Sensing and Radar/SAR.

They get insight into the current research trends, innovative sensor technology, associated signal processing, and the subsequent data processing and transmission steps.

Contributions

Authors are encouraged to submit a one-page abstract in English. All submissions must be submitted via e-mail. Further information are available on the workshop website: <u>www.fhr.fraunhofer.de/~weiss/cosera</u>. All contributions will be distributed on a DVD during the workshop. Authors of presented papers are invited to contribute to the Special Section on Compressed Sensing applied to Radar in the IEEE Transactions on Aerospace and Electronic Systems. Registered authors will be kept informed via e-mail. For help, please send an e-mail to <u>matthias.weiss@fhr.fraunhofer.de</u>.

Important Dates

19. Feb. 2012	Submission of abstract
05. March 2012	Notification of acceptance
01. April 2012	Registration deadline
1416. May 2012	Workshop CoSeRa 2012

Organisation

J. Ender, Fraunhofer FHR, DE; H. Rauhut, Univ. Bonn, DE; L. Prünte, Fraunhofer FHR, DE; M. Weiß, Fraunhofer-FHR, DE; J. Fiege, Fraunhofer FHR, DE; L. Anitori, TNO, NL.

Location & Venue

The convention center (Universitätsclub Bonn) is located near the University (Konviktstr. 9, 53113 Bonn, Germany) in a park area.

A history of more than 2000 years has given Bonn most varied facets. Historical sights can be spotted throughout the city. The flair of international life and picturesque impressions along the romantic Rhine are waiting to be discovered.