Program of the WIC symposium 2013
Location imec, Caf -1A

Thursday May 30 2013

09:00 – 10:00  Registration/coffee
09:50 – 10:00  Opening (Liesbet Van der Perre)
10:00 – 10:40  Invited presentation

Ove Edfors: Massive MIMO - Performance of low-complex linear precoding

Spatial multiplexing using massive MIMO has been shown to have very promising properties, including low-complex linear precoding, large increases in spectral efficiency, and several orders of magnitude lower transmit powers - as compared to today's access schemes. These things have, however, been shown for theoretical channels with i.i.d. complex Gaussian coefficients. From a practical point of view, it is therefore important to evaluate massive MIMO in more realistic scenarios, with real massive-MIMO channels. We pursue this by analyzing measurement data from several measurement campaigns in the 2.6 GHz frequency range, using different antenna array structures with 128 antenna elements. A comparison between i.i.d. and measured massive-MIMO channels is done, with the objective of finding out how well we can expect low-complex linear precoding to work in real massive-MIMO environments.

11:00 – 12:30  Cryptography

T. Veugen, H. Stokking: Secure Processing Offload in Recombining Media Segments for Mobile Access (TNO)


Q. Wang, V. Rijmen, Deniz Toz, K. Varici: Study of the AES-like Super Boxed in LED and PHOTON (KU Leuven)

D. Kononchuk, Z. Erkin, J.C.A. van der Lubbe, R. L. Lagendijk: Building Blocks for Privacy-Preserving Recommender Systems in a Dynamic Setting (Delft University of Technology)

12:30 – 14:00  Lunch

14:00 – 15:30  Signal Processing for Communication

A. Martin, L. Vandendorpe, J. Louveaux: Precoder Optimization for DSP with High Crosstalk (Université Catholique de Louvain)

M. Bauduin, T. Deleu, F. Duport, P. De Doncker, S. Massar, F. Horlin: Equalization of the non-linear 60 GHz channel: Comparison of reservoir computing to traditional approach (Université Libre de Bruxelles)
E.J.G. Janssen, H. Habibi, Wu Yan, J.W.M. Bergmans, P.G.M. Baltus: *A system Study on Nonlinear Interference Suppressor for Local Interferences* (Eindhoven University of Technology)

C. Li, M. Li, S. Pollin, M. Verhelst, L. Van der Perre: *Towards perfectly rejecting one dominating harmonic interference in SDR receiver* (IMEC CSI, KU Leuven)

15:30 – 17:00

**Poster session and refreshment drinks**

T. Vermeulen, S. Pollin: *Digital Self-Interference Cancellation for Full Duplex Communication on USRP* (KU Leuven)


H. Habibi, E.J.G. Janssen, Wu Yan, P.G.M. Baltus, J.W.M. Bergmans: *Closed-loop adaptation of Non-linear Interference Suppressor for Local Interferences* (Eindhoven University of Technology)


J.-F. Determe, A. Bourdoux, F. Horlin: *A recursive OMP algorithm for spectrum sensing using the Modulated Wideband Converter* (Université Libre de Bruxelles)

Z. Jin, T. Wang, J.-B. Wei, J. Louveaux, L. Vandendorpe: *A Low-Complexity Algorithm for sum Rate Maximization in Multi-Cell Opportunistic DF relay aided OFDMA downlink systems* (Université Catholique de Louvain)

M. Drijvers, P. Luz, G. Alpar, W. Lueks: *Ad Hoc Voting on Mobile Devices* (Radboud University Nijmegen)

L. De Meyer, B. Bilgin, B. Preneel: *Extended Analysis of DES S-boxes* (KU Leuven)

A. Hendrikse: *Signal Processing in hearing aids* (GN ReSound)

X. Wang, J.-P. Linnartz, T. Tjalkens: *Optimization by simulated annealing: Intelligent light control using an array of dimmable LEDs* (Eindhoven University of Technology)

17:00 – 18:00

General Assembly of the Werkgemeenschap voor Informatie- en Communicatietheorie

18:30 – 19:30

Visit Museum M

Meeting point: in front of the Museum M

19:30

Dinner at Museum M
Friday May 30 2013

09:00 – 10:30  Capacity and Coding

L. Tolhuizen: Coding for known erasure values at the decoder (Philips Research Eindhoven)

A. Tsiatmas, C.P.M.J. Baggen, F.M.J. Willems: Information Transmission using Illumination Systems (Eindhoven University of Technology)

Z. Ren, J. Goseling, J. Weber, M. Gastpar: Compute-and-Forward on a Line Network with Random Access (Delft University of Technology)

B. Skoric, A.P. Mosk, P.W.H. Pinkse: Security of Quantum-Readout PUFs against quadrature-based challenge-estimation attacks (Eindhoven University of Technology, University of Twente, MESA Institute for Nanotechnology)

10:30 – 11:00  Coffee break

11:00 – 12:30  Poster session 2

C.J.A. Jansen: On the Orders of Binary Matrix Pairs (Compumatica, The Netherlands)

L. Tolhuizen: The error probability after erasure decoding is monotonically non-decreasing in the erasure probability (Philips Research Eindhoven)

A. Ureta-Staackmann: Simulation of room transfer functions with directivity patterns on the basis of modes (Delft University of Technology)


K. Papagiannopoulos, G. Alpar, W. Lueks: Designated Attribute Proofs with the Camenish-Lysyanskaya Signature (Radboud University Nijmegen, TNO)

E. Marin, D. Singelee, S. Pollin: Security Analysis of An implantable Cardioverter Defibrillator (KU Leuven)

J. Rodríguez, M. Mercuri, P. Karsmakers, P.J. Soh, P. Leroux, D. Schreurs: Automatic Fall Detector Based on Sliding Window Principle (KU Leuven, Thomas More)

C. van Dam, L.J. spreeuwers, R.N.J. Veldhuis: Model-free 3D Shape Reconstruction from Video Sequences (University of Twente)

J. de Groot, J.-P. Linnartz: Secrecy rate versus verification performance in biometric authentication schemes (Eindhoven University of Technology)

M. Mitici, J. Goseling, M. de Graaf, R. J. Boucherie: Optimal deployment of caches in the plane (University of Twente, Delft University of Technology)
12:30 – 14:00  
   Lunch

14:00 – 15:10  
   **Sensing and Feature Detection**

   Y. Peng, L. Spreeuwers, B. Gokberk, R. Veldhuis: *Comparison of Super-Resolution Benefits for Face Recognition on Downsampling Images and Realistic Low-Resolution Data* (University of Twente)

   J. Bodart, J. Verlant-Chenet, A. Bourdoux, J.M. Dricot, P. De doncker, L. Lampe, F. Horlin: *Distributed Compressed Sampling Architecture for Maximum Likelihood Signal Detection* (Université Libre de Bruxelles)

   A. Jalalirad, T. Tjalkens, J.-P. Linnartz: *Selecting feature-based models* (Eindhoven University of Technology)

   M. R.J. Gerrits, R.C. Hendriks, N.D. Gaubitch: *Evaluation of objective measures for the prediction of musical noise in enhanced noisy speech* (Delft University of Technology)

15:10 – 15:50  
   **Invited presentation**

   A. Lambrechts, *Hyperspectral imaging for ‘dummies’* (IMEC)

15:50 – 16:00  
   Best student paper award ceremony

16:00  
   Closing (Liesbet Van der Perre)