

**Institut für Signalverarbeitung  
und Sprachkommunikation (4420)**

Univ.-Prof.Dipl.-Ing.Dr.  
Gernot Kubin

Inffeldgasse 16c/EG  
8010 Graz

Tel.: +43 316 873 4334  
Fax: +43 316 873 104334

gernot.kubin@tugraz.at  
<http://www.spsc.tugraz.at>

Graz, Feb.19, 2018

DVR: 008 1833

UID: ATU 574 77 929

### *Invitation for a Guest Lecture*

Dear colleagues,

I want to invite you for the following guest lecture by

Prof. Thomas Eriksson  
Chalmers University of Technology  
Gothenburg, Sweden

#### **”Amplifiers and Predistortion in Massive MIMO”**

Tuesday, March 6, 2018 at 13:30 hrs  
Seminar Room IDEG134, Inffeldgasse 16c/ground floor

Please forward this invitation to colleagues and friends.  
Hope to see you all there!

Gernot Kubin

#### Abstract:

Massive MIMO is a key technology in the 5G wireless communication network.

However, to exploit massive MIMO to its potential many hardware-related issues must be considered.

Since the cost per component should be kept low, it can be expected that the hardware is less than perfect so that modeling and compensation of imperfections become of utmost importance.

In this talk, we study issues such as nonlinear amplifiers, phase noise, I/Q imbalance, antenna crosstalk, clipping in ADCs and DACs, etc., and suggest how these issues can be modeled and compensated or exploited to reach the full potential of massive MIMO.

#### Biography:

Thomas Eriksson received the Ph.D. degree in Information Theory from Chalmers University of Technology, Gothenburg, Sweden, in 1996. From 1990 to 1996, he was at Chalmers. In 1997 and 1998, he was at AT&T Labs - Research, Murray Hill, NJ, USA. In 1998 and 1999, he was at Ericsson Radio Systems AB, Kista, Sweden. Since 1999, he has been with Chalmers University, where he is currently a professor of communication systems. Further, he was a guest professor with Yonsei University, S. Korea, in 2003-2004. He has authored or co-authored more than 200 journal and conference papers, and holds 11 patents.

Prof. Eriksson is leading the research on hardware-constrained communications with Chalmers University of Technology. His research interests include communication, data compression, and modeling and compensation of non-ideal hardware components (e.g. amplifiers, oscillators, and modulators in communication transmitters and receivers, including massive MIMO). Currently, he is leading several projects on e.g. 1) massive MIMO communications with imperfect hardware, 2) MIMO communication taken to its limits: 100Gbit/s link demonstration, 3) Massive MIMO testbed design, 4), Satellite communication with phase noise limitations, 5) Efficient and linear transceivers, etc.

He is currently the Vice Head of the Department of Signals and Systems with Chalmers University of Technology, where he is responsible for undergraduate and master's education.