



# KOLLOQUIUM

Institut für Elektrotechnik, Elektronik und Informationstechnik

## **Robust Precoding – An Estimation Theory Perspective**

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Cauerstraße 7/9, Hörsaal H5

**Diskussionsleitung: Prof. Dr.-Ing. habil. J. Huber**

In multiuser communication systems the transmitter design strongly depends on the system model and the reliability of its parameters. In particular, most of the recently proposed precoding techniques exhibit a drastical degradation if parameters of the systems are distorted. As a consequence it has been proposed to take into account the parameter's uncertainty into the transmitter design. To this end, two type of error models have been introduced, a deterministic and a stochastic error model. Whereas the first model leads to a worst-case design of the transmitter, the latter results in a robust transmitter design which is derived from an estimation theory perspective. In this presentation we will follow the second approach for the robust design of a nonlinear precoder at the transmitter of a multiuser communication scenario where the uncertainty of the system parameters is introduced by estimation errors and the outdated of feedback information due to the mobility of the receiver units.