



KOLLOQUIUM

Institut für Elektrotechnik, Elektronik und Informationstechnik

Introduction to UMTS Baseband Signal Processing

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Donnerstag, der 20.01.2005, 17¹⁵ Uhr
Cauerstraße 7/9, Hörsaal H5

Diskussionsleitung: Prof. Dr. M. Huemer

Third generation mobile communication systems like UMTS (Universal Mobile Telecommunication System) are designed to provide high and varying bit rate services to end users. WCDMA (Wideband Code Division Multiple Access) is the air interface used for UMTS. This lecture gives a short overview of WCDMA basics and the UMTS physical layer including spreading, modulation, channel coding, and physical layer procedures like power control, cell search and transmit diversity. Basic receiver concepts are introduced covering rake receivers including channel estimation and multipath combining.

An outlook to HSDPA (High Speed Downlink Packet Access) is given. HSDPA is a key feature of UMTS being deployed in the next years. It increases the peak data rate to 14 Mbps mainly due to introduction of adaptive modulation and coding techniques.