

# Information Theory and its Applications in Communication Engineering (2VK)

## GUEST LECTURE

Lecturer: Prof. Dr.-Ing. habil. Johannes Huber

### Contents:

Basic definitions: information, entropy, mutual information;  
Coding for data compression: source coding theorem;  
Lossless compressing codes: Huffman-, Tunstall-, Lempel-Ziv-codes,  
entropy and coding for sources with memory.  
Channel coding for reliable communications over  
noisy channels  
Information theory for continuous random  
variables: differential entropy, capacity of channels with  
white and coloured noise, bandlimited continuous-time channels,  
tradeoff between power and bandwidth efficiency.  
Introduction to Rate-Distortion-Theory.

Schedule | 15th June & 16th June 2012 (9:00 – 17:00)  
22nd June & 23rd June 2012 (9:00 – 17:00)

where | Lakeside Bo4a, 1st floor, L4.1.01