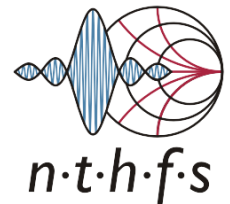


LECTURE (KV)

Title: **Ausgewählte Kapitel der Signal- und Informationsverarbeitung – Kanalcodierung (382022)**

<https://kusss.jku.at/kusss/selectcoursegroup.action?coursegroup-id=8848&courseclassid=39111>



Lecturer: **Univ.-Prof. Dr.-Ing. Johannes Huber**
Friedrich-Alexander University
Erlangen-Nuremberg

Start: 09.06.17 – 14.06.17, 13:45 (Block)

Location: Science Park 3, 058



Contents:

This lecture covers the fundamentals and applications of channel coding in digital communication and also provides insight into current research activities in this field.

Topics covered:

- Fundamentals of Block Coding
- Finite Fields I: Prime Fields
- Linear Block Codes
- Linear Cyclic Codes
- Finite Fields II: Extension Fields
- BCH und RS Codes
- Convolutional Codes, Viterbi-Algorithm, BCJR-Algorithm
- Codes with Iterative Decoding, Turbo Codes
- Principles und Limits for Information Combining
- LDPC-Codes, Protographs, Spatial Coupled and convolutional LDPC-Codes
- Polar Codes
- Coded Modulation

Biography:

Since autumn 1991, he is Professor at the Friedrich-Alexander-University Erlangen-Nuremberg, Germany. His research interests are information and coding theory, modulation schemes, algorithms for signal detection and adaptive equalization for channels with severe intersymbol interference, signalling, detection and equalization or multiple-input multiple-output (MIMO) channels and concatenated coding together with iterative decoding.

From 1994 to 1996 Johannes Huber served as dean for student affairs for the Technical Faculty of the University Erlangen-Nuremberg, from 2001 to 2003 he was chairman of the department of electrical, electronic, and communication engineering and from October 2007 till September 2009 he was dean of the Technical Faculty. Johannes Huber is Fellow of the IEEE. He was a member of the board of governors of the IEEE Information Theory Society from January 1999 to December 2001 and again from January 2004 to December 2006. In 2008 he was appointed a corresponding fellow of the Royal Society of Edinburgh. Since 2009 Johannes Huber is an ordinary fellow of the Bavarian Academy of Sciences and Humanities. From 1994 to 2004, Johannes Huber was a member of the editorial board of the "International Journal on Electronics and Communications (AEÜ)" and between 1997 and 2002 he was editor-in-chief of this journal. From 1996 to 1999 he was an associate editor of the "IEEE Transactions on Communications". He has also been chairman and member of the program committees of several international conferences on information theory and coding. Johannes Huber is author and co-author of textbooks on trellis coding and information combining. He has published more than 220 papers in international journals or conference records. Papers authored or co-authored by Johannes Huber were awarded the best paper award of the German Society of Information Technology (ITG) in 1988, 2000, and 2006. He received the Vodafone award for innovations in mobile communications 2004.

