

# 20SK – Signals and Codes

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## Lecture 10 – Prefix-free codes, optimal coding (2015/12/03)

Topics discussed:

- Optimal prefix-free codes, Huffman coding
- Arithmetic coding

The relevant literature is [1, chapter 2], [2, chapter 2] and [3, section 1.2]. Huffman coding and arithmetic coding are also described in Wikipedia.

### Resources

- [1] Gallager, R.: Course materials for 6.450 *Principles of Digital Communications I*, Fall 2006. MIT OpenCourseWare (<http://ocw.mit.edu/>), Massachusetts Institute of Technology.
- [2] Adámek, J: *Foundations of Coding: Theory and Applications of Error-Correcting Codes with an Introduction to Cryptography and Information Theory*. Wiley Interscience, 1991, 352 pp.
- [3] Seibt, P.: *Algorithmic Information Theory – Mathematics of Digital Information Processing*. Springer, 2006, 447 pp.