

Ilmenau International Seminar Series on Communications and Signal Processing
26.04.2016, 10:00 a.m., room K 2001

Topics in Canonical Polyadic Tensor Decomposition and in Blind Source Separation.

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The seminar will cover three topics in the Canonical Polyadic Tensor Decomposition.

In the first part, a novel variant of the most traditional CP decomposition method - Alternating Least Squares - will be presented. The method is based on partitioning of the factor matrices. Complexity of each iteration is higher, in general, than complexity of the classical ALS, but if the tensor has missing entries, the complexity is about the same. The convergence of the method is linear, as in the ALS, but the rate of the convergence is significantly faster, namely when factor matrices contain nearly co-linear columns.

The second topic is a method of two-side and three-side diagonalization of a tensor. Its main motivation is the block term decomposition. The third topic of the seminar is application of CP decomposition in small matrix multiplication.

A short contribution on blind separation of piecewise AR(1) processes will be presented by PhD student Ondrej Sembera.