

A local convergence theory of the ALS algorithm for tensor approximation
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Much analysis on the ALS algorithm for tensor approximation focusses on global questions like swamps, cycles and convergent subsequences to critical points. But any widely used algorithm should desirably also come with a local convergence theory. In this talk we present a local convergence theorem for PARAFAC-ALS under reasonable (and maybe unavoidable) assumptions. This result is a particular instance of a general framework of alternating optimization with scaling redundancies. We apply the same theory to obtain a local convergence theorem for TT approximation by ALS.