The Largest Eigenvalue of A Nonnegative Tensor

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Recently, linear convergence was established for algorithms for finding the largest eigenvalue of an essentially positive or weakly positive tensor. It was also seen that eigenvalues of nonnegative tensors have a close link with eigenvalues of homogeneous monotone maps. These opened a new and rich area of numerical multi-linear algebra: nonnegative tensors. It is expected a comprehensive theory and efficient algorithms for nonnegative tensors will be developed, parallel to the theory and algorithms of nonnegative matrices. This talk reviews these development.