

The Largest Eigenvalue of A Nonnegative Tensor

Liqun Qi

Department of Applied Mathematics, The Hong Kong Polytechnic University, Hong Kong

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.