1143-15-341 **J. Fan** and **Jiawang Nie*** (njw@math.ucsd.edu), San Diego, CA 92093, and **A. Zhou**. *Tensor Eigenvalue Complementarity Problems.*

This talk discusses tensor eigenvalue complementarity problems. Basic properties of standard and complementarity tensor eigenvalues are discussed. We formulate tensor eigenvalue complementarity problems as constrained polynomial optimization. When one tensor is strictly copositive, the complementarity eigenvalues can be computed by solving polynomial optimization with normalization by strict copositivity. When no tensor is strictly copositive, we formulate the tensor eigenvalue complementarity problem equivalently as polynomial optimization by a randomization process. The complementarity eigenvalues can be computed sequentially. The formulated polynomial optimization can be solved by Lasserre's hierarchy of semidefinite relaxations. We show that it has finite convergence for general tensors. (Received August 18, 2018)