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**Amir Ali Ahmadi\*** (a\_a\_a@princeton.edu), Operations Research and Financial Eng., Princeton University, NJ , and **Anirudha Majumdar**, MIT, Cambridge, MA. *New Algebraic Relaxations for Polynomial and Discrete Optimization.*

Sum of squares (SOS) programming is a powerful algebraic technique for producing semidefinite programming relaxations for a wide range of NP-hard problems in continuous and discrete mathematics. In this talk, we present our recent frameworks of “DSOS and SDSOS Programming”, which are more tractable alternatives to SOS programming, relying on linear or second order cone optimization. We focus on the applications of these tools to problems in discrete optimization. (Received September 05, 2014)