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*Computing the Nearest Doubly Stochastic Matrix by a Newton-type Method*

In this talk, we present a Newton-type method for finding the nearest doubly stochastic matrix in the Frobenius norm to a given matrix. The optimality condition of this problem can be stated as a system of strongly semismooth functions. We study a Newton-type method to solve this system, and thus finding the nearest doubly stochastic matrix. We provide a sufficient condition for the quadratic convergence of the semismooth Newton method. We also propose a modified Newton method for the general case. This is a joint work with Haesol Im, Xinxin Li and Henry Wolkowicz.