

Jiawang Nie

University of California, San Diego

## Quantum entanglement and separable matrices

### Abstract

A real symmetric matrix is separable if it can be written as a sum of Kronecker products of positive semidefinite matrices. This talk concerns how to check if a matrix is separable or not. We propose a numerical algorithm, based on Lasserre type semidefinite relaxations, for solving the question. To check the separability of a matrix, we construct a hierarchy of semidefinite relaxations. If it is not separable, we can get a mathematical certificate for that; if it is, we can get a decomposition for the separability. This is a joint work with Xinzhen Zhang.

Talk time: 7/21/2016 3:30PM— 7/21/2016 3:50PM

Talk location: Cupples I Room 113

Special Session: Finite and infinite dimensional moment problems. Organized by M. Infusino, S. Kuhlmann, and T. Kuna.