

High-dimensional Theta Numbers

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The celebrated Lovász theta number of a graph is a semidefinite programming upper bound for the independence number of a graph. This talk presents a generalization of the theta number to higher-dimensional simplicial complexes and, based on this notion, a hierarchy of semidefinite relaxations for the independence number of a graph. We will then consider the behavior of these higher-dimensional theta numbers for random complexes and graphs.

This is a joint work with Christine Bachoc.