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THE GEOMETRY OF GAUSSOIDS

Abstract:

Gaussoids are combinatorial structures that encode independence in probability and statistics, just like matroids encode independence in linear algebra. We show that the gaussoid axioms of Lněnička and Matúš are equivalent to compatibility with certain quadratic relations among principal and almost-principal minors of a symmetric matrix. This approach facilitates insights into symmetry and realizability of gaussoids as well as several extensions (like oriented, positive, and valuated gaussoids).

This talk is based on a joint work with T. Boege, A. D'Ali, and B. Sturmfels