Quasisymmetric functions and random walks on permutations

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Thursday, October 30, 2008
007 Kemeny Hall, 4:00 pm
(Tea 3:30 pm 300 Kemeny Hall)

Abstract

Quasisymmetric functions are a kind of formal power series used in a variety of algebraic and combinatorial problems. When these problems involve associating one combinatorial object with another, one is often lead to consider a corresponding operator that transforms one quasisymmetric function into another. I will discuss joint work with Patricia Hersh showing how these operators, which often have nice spectral properties, give rise to random walks on permutations. Many well-known random walks can be realized this way, including certain card shuffling schemes. Notably, the face up, face down shuffling scheme studied by Bayer and Diaconis now arises in connection with the problem of enumerating regions of a hyperplane arrangement.

This talk should be accessible to graduate students.

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