Combinatorics
Seminar

Algorithmic and combinatorial applications of the cluster expansion

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Abstract: The cluster expansion is a classical tool from statistical physics traditionally used to study the phase diagram of lattice spin models. Recently, the cluster expansion has enjoyed a number of applications in two new contexts: i) the design of efficient approximate counting and sampling algorithms for spin models on graphs and ii) classical enumeration problems in combinatorics. In this talk, I'll give an introduction to the cluster expansion and discuss some of these recent developments.

Friday, October 28, 2022, 3:30 pm

Mathematics and Science Center: MSC E406

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