

Speaker

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Workshop

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Location and date

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Title

Asymptotics for graphically divergent series

Abstract

We propose a new method for obtaining the coefficients of complete asymptotic expansions in a systematic way, which is suitable for various graph families. The core idea is to introduce a new kind of (bivariate) generating series for the expansion coefficients, which we call a *coefficient generating function*. In this talk, we show that coefficient generating functions satisfy some general properties that allow to express asymptotics in a short closed form and give a combinatorial meaning to their coefficients. Applications of our method include calculating asymptotics of connected graphs, irreducible tournaments, strongly connected digraphs, satisfiable 2-SAT formulae and contradictory strongly connected 2-SAT formulae. Moreover, for each of the above cases, we obtain expressions for the cases with a fixed number of connected, irreducible, strongly connected and contradictory components, respectively.

This is joint work with Sergey Dovgal.