IST AUSTRIA
Institute of Science and Technology

Mathematics and CS Seminar

A generalized matrix-tree theorem for Pfaffian pairs

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Host: Vladimir Kolmogorov

The celebrated matrix-tree theorem, which is to count the number of spanning trees in graphs, is a theorem essentially for counting bases of general regular matroids. Webb (2004) introduced the notion of Pfaffian pairs as a pair of regular matroids for which counting of their common bases is tractable through the matrix-tree theorem. This class can represent a bunch of important combinatorial structures, such as spanning trees, arborescences, Euler tours in 4-regular digraphs and perfect matchings in K_{3,3}-free bipartite graphs. In this talk, as an application of the matrix-tree theorem for Pfaffian pairs, we present deterministic polynomial-time algorithms for several counting problems: exact, group-labeled and weighted problem settings.

Friday, November 15, 2019 11:00am - 12:00pm

IST Austria Campus Mondi Seminar Room 3, Central Building

This invitation is valid as a ticket for the IST Shuttle from and to Heiligenstadt Station. Please find a schedule of the IST Shuttle on our webpage: https://ist.ac.at/en/campus/how-to-get-here/ The IST Shuttle bus is marked IST Shuttle (#142) and has the Institute Logo printed on the side.