



Fakultät für Ingenieurwissenschaften, Informatik und Psychologie

Informatik-Fachvortrag

Mittwoch, den 9. September 2026, 11:00 Uhr

Universität Ulm, Oberer Eselsberg

Gebäude O27, Raum 531

Herr Dr. Archit Chauhan

Indian Institute of Technology Bombay (IITB)

spricht zum Thema

The Even-Path Problem in Directed Single-Crossing-Minor-Free Graphs

Finding a simple path of even length between two designated vertices in a directed graph is a fundamental NP-complete problem. Nedev proved in 1999, that for directed planar graphs, the problem can be solved in polynomial time. We give a polynomial time algorithm to solve the EvenPath problem for classes of H-minor-free directed graphs, where H is a single-crossing graph. We use a theorem of Robertson-Seymour which states that single-crossing-minor-free graphs can be decomposed using 3-clique sums into pieces that are either planar, or of bounded treewidth. We then develop two ingredients which might be of independent interest. The first is construction of small planar parity mimicking networks, which are graphs that mimic parities of all possible paths between a designated set of terminals of the original graph.

The other is an algorithm for finding disjoint paths in planar graphs, with constraints on total parity, in some restricted settings.

Based on joint work with Samir Datta, Chetan Gupta, and Vimal Raj Sharma.

Es laden ein die Dozenten der Fakultät für Ingenieurwissenschaften, Informatik und Psychologie.

Ulm, den 07.09.2026

gez. Prof. Dr. Enno Ohlebusch