

Name: Hendricus van der Holst
Supervisor: Prof. dr. Martin Aigner
Field of Research: Graph theory and Combinatorics
Topic: graph polynomials and topological graph theory
Postdoc Student: at the program from 1/11/2000 to 1/11/2002

Field of Research and results

Computing the Penrose polynomial of binary matroids of bounded branch-width. A branch-decomposition of a binary matroid M with ground set E is a pair (T, ϕ) where T is a ternary tree and ϕ is a bijection between the elements of E and the leaves of T . Each edge e of T partitions the ground set of M in two subsets A, B , the set of elements of E corresponding to the leaves in one component of $T \setminus e$ and the set of elements of E corresponding to the leaves of the other component. Thus each edge of T defines a separation of M . The width of an edge is the order of the separation. The width of the branch-decomposition is the maximum width over all edges of T . The branch-width of M is maximum width over all branch-decompositions of M . This semester I tried to find a polynomial time algorithm to compute the Penrose polynomial of binary matroid of branch-width bounded by some constant k , extending a result of the last semester, that the Penrose polynomial can be computed in polynomial time for planar graphs of branch-width bounded by some constant k .

Activities

- Referee for Journal of Combinatorial Theory, Series B.
- I attended the 'Walter Deuber's 60th Birthday' Conference at Humboldt Universität zu Berlin, October 7/8, 2002.
- I gave a talk at Annual CGC workshop in Hiddensee, October 9 to October 12, 2002.