Graz University of Technology

Institut für Geometrie

Geometrisches Seminar

04.05.2022, 15:00 Uhr bis 16:00 Uhr

Seminarraum 2 (NT04064), Kopernikusgasse 24, 8010 Graz

Greedy generation for Hamilton paths in rectangulations, elimination trees and matroids

Arturo MERINO

(TU Berlin)

In this talk we apply a greedy framework to derive exhaustive generation algorithms for two classes of combinatorial objects, as well as Hamilton paths and cycles on their corresponding polytopes:
(1) different classes of rectangulations, which are subdivisions of a rectangle into smaller rectangles (see www.combos.org/rect);
(2) elimination trees of chordal graphs, which generalize several interesting combinatorial/geometric objects such as permutations, binary trees and bitstrings (see www.combos.org/elim). If time permits, we will also discuss a dual approach which allows for efficiently generating all of the bases/independent sets of a matroid, as well as Hamilton paths on their corresponding polytopes.

This talk is based on joint work with Jean Cardinal, Torsten Mütze and Aaron Williams.

Dr. Cesar CEBALLOS LOPEZ