
TAMAS TERLAKY, McMaster University, Hamilton, ON

Polytopes & Arrangements: Diameter & Curvature

It was shown recently that the central path can be bent along the simplex path of Klee–Minty cubes. This lead to tightening the iteration complexity bound of central path following interior point methods. Further, intriguing analogs between edge-paths and central paths arise. We conjecture that the order of the largest total curvature of the central path is the number of inequalities, and that the average diameter of a bounded cell of an arrangement is less than the dimension. We substantiate these conjectures and prove a continuous analog of the d -step conjecture.

Joint work with A. Deza, E. Nematollahi and Y. Zinchenko.