

Helly-Type Theorems on Support Lines for Families of Congruent Disks in the Plane

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Abstract

This talk will focus on Helly-type theorems for support lines of nonoverlapping families of congruent disks in the plane. This problem, originally posed by R. Dawson for the case of disjoint families of convex bodies and by V. Soltan for the case of disjoint families of unit disks, has been recently solved. This research generalizes to the case of non-overlapping families of congruent disks. An essential part of the argument is based on the study of "critical" families of congruent disks. The talk will be self-contained with essential definitions included.

Keywords: Helly-type theorems, convex bodies, unit disks, congruent disks.