

Incidence problems in higher dimensions

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Geometric incidence problems have surprising applications in various fields of mathematics and theoretical computer science. The basic theorems bounding the maximum number of point-line and point-curve incidences are the Szemerédi-Trotter theorem (points and lines) and the Pach-Sharir theorem (curves and lines). There are many open questions for the planar case and even more for the higher dimensional variants. In this talk we will consider incidence problems in the real 3-space and in the complex plane.