

Tangent hyperplanes to convex bodies

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The Greeks two thousand years ago already knew that two disjoint circles have four tangent lines. We will explore this question when the circles are replaced by convex bodies in arbitrary dimensions. Bisztriczky (1990) proved that, with the right generalization of disjointness, d convex bodies in dimension d have 2^d tangent hyperplanes. In this talk we present a general description of the set of tangent hyperplanes to m convex bodies in dimension d (with $m < d$), generalizing a Theorem of Cappell, Goodman, Pach, Pollack, Sharir and Wenger. This is joint work with Joseph Doolittle and Jose Samper.

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