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Arrangements of Submanifolds and the Tangent-Bundle Complement

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A real arrangement of hyperplanes is a collection of finitely many hyperplanes in a real vector space. It is known that the combinatorics of the intersections contains substantial information about the topology of the complement of the hyperplanes in the complexified space. For example, the cohomology of the complement can be expressed in terms of the intersection lattice associated with the arrangement. The face poset of an arrangement defines a simplicial complex (Salvetti's complex) which has the homotopy type of the complement.

In the same spirit, I define the notion of an arrangement of submanifolds and its complexification, and I investigate whether there is any relationship between the combinatorics of the intersections and the topology of the complement. The aim of this talk is to introduce this generalization of hyperplane arrangements and report current results.
