Cal Poly Pomona

Colloquium Series
Department of
Mathematics & Statistics

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Demystifying Contact Topology via Singularities

Abstract: A key approach to studying shapes/topological manifolds is decomposing them into smaller shapes/submanifolds using special functions called "open book decompositions". Open books offer a powerful framework for analyzing special odd-dimensional differentiable manifolds ("contact manifolds") that shifts the study of these geometric objects to a topological perspective. For example, every three-dimensional contact manifold can be represented as an open book, where the pages are surfaces and the binding is a topological knot or link. This talk explores higher-dimensional contact manifolds, examining their topological and geometric properties, and discusses ongoing research on similar "fibrations" with special singularities. No background on contact topology will be assumed.

Keywords: topological manifolds, open book decompositions, Lefschetz fibrations, contact structures

Wednesday, April 9, 1:05 – 1:50 pm in 1-309