Winter Colloquium Series

Sensitivity of Geometric Structures

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Abstract: Geometric structures are described by tensors on manifolds. Examples include tangent vector fields on surfaces, symplectic forms, Riemannian metrics, and Poisson tensors. The study of such objects involves a mix of topology and geometry which influence global features (existence of fixed points, topological obstructions, foliations) and tensor analysis which describes local features (local normal forms, curvature, local cohomology). Introducing the relevant objects of study, I will present recent results by myself and collaborators on local features of quadratic Poisson structures which, surprisingly, exhibit sensitive dependence on rationality of the parameters determining the structure. Much of this work was carried out during my sabbatical as a visiting professor at the University of Notre Dame in Indiana, and throughout the talk, I will share stories and photos from my cross country adventures there and back again.

Keywords: Differential geometry, analysis, fun photos and stories

Wednesday, Feb. 21, 1:05 - 1:50pm in 3-1623