



Speaker: Ioan Marcu
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Thursday, April 10, 2014
2:00 PM
258 Hurley Hall

Title: Linearization around symplectic leaves

Abstract:

Poisson geometry is a natural generalization of symplectic geometry. A Poisson manifold can be thought of as "smooth" decomposition of a manifold (similar to a stratification or a foliation) into immersed symplectic manifolds. Yet, compared to symplectic geometry where canonical Darboux coordinates exist locally, in Poisson geometry even the local structure can be highly nontrivial. I will start the talk by explaining some of the classical results on linearization/nonlinearization of Poisson structures around fixed points, due to Weinstein and Conn. Then, I will present a normal form theorem around general symplectic leaves, which generalizes Conn's result, and which represents the Poisson geometric analog of the Reeb-Thurston stability results from foliation theory. If time permits, I will explain how these results can be seen as a consequence of a global rigidity phenomenon in Poisson geometry.