Department of Mathematical Sciences welcomes

Pierre Albin
University of Illinois at Urbana-Champaign

November 2, 2018

Hosted by:
Prof. Dan Ramras

Tea begins at 2:30
in LD 259

Research Topic
begins at 3:00
in LD 229

Hodge theory of pseudomanifolds

ABSTRACT:

Singular spaces show up in geometry all of the time, for example as algebraic varieties, orbit spaces of group actions, and moduli spaces of geometric structures. When we study these spaces traditional analytic and topological tools for smooth manifolds need to be modified to take into account the presence of singularities. I will report on joint work with several collaborators in which we develop analytic tools on pseudomanifolds, apply them to Hodge theory, and obtain extensions of topological invariants from closed manifolds such as the signature and higher signatures.

ABOUT THE SPEAKER:

Pierre Albin works in the area of geometric analysis, and his work is closely connected to topology, K-theory, and non-commutative geometry. He received his doctorate in 2005 from Stanford University, under the direction of Rafe Mazzeo. After postdoctoral positions at MIT, IAS, Courant, and Jussieu, he joined the faculty at UIUC in 2011 and has been Associate Professor there since 2016.

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