Colloquium

UNIVERSITY OF NOTRE DAME
Department of Mathematics

Speaker: **Gerard Besson**
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Thursday, October 14, 2010
2:00 pm
258 Hurley Hall

Title: Differentiable Rigidity under Ricci curvature lower bound

Abstract:
Let (Y, g) and (X, g_0) be two closed n-dimensional Riemannian manifolds ($n \geq 3$) and be a continuous map of degree 1 between Y and X. We furthermore assume that the metric g_0 is real hyperbolic and denote by d its diameter. We show that there exists a number $\varepsilon := \varepsilon(n; d) > 0$ such that if the Ricci curvature of the metric g is bounded below $-n(n-1)$ and its volume satisfies $vol_g(Y)$ $leq(1+\varepsilon)vol_{g_0}(X)$ then the manifolds are diffeomorphic. The proof relies on Cheeger-Colding's theory of limits of Riemannian manifolds under lower Ricci curvature bound.