

1145-35-1055

Jeremy LeCrone* (jlecrone@richmond.edu), **Ivan Blank** and **Brian Benson**. *Mean Value Theorems for Riemannian Manifolds via the Obstacle Problem.*

In this talk, we discuss recent results regarding a formulation of the Mean Value Theorem for the Laplace-Beltrami operator on smooth Riemannian manifolds. We define the sets upon which mean values of (sub)-harmonic functions are computed via a particular obstacle problem in geodesic balls. After discussing obstacle problems are leveraged to produce our Mean Value Theorem, we explore local and global theory for our family of mean value sets and connections between the properties of these sets and the geometry of the underlying manifold. (Received September 18, 2018)