CCSU
DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, April 6
3:00 – 4:00 PM
Maria Sanford, Room 101

CURVATURE NOTION FOR GRAPHS FOLLOWING BAKRY-ÉMERY'S Γ-CALCULUS

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Abstract: Using the Γ-Calculus of Bakry and Émery for Markov diffusion operators, one can construct a discrete version of an inequality due to Bochner for smooth functions on manifolds. By ascribing a (synthetic) notion of a lower curvature bound and an upper dimensional bound for a graph to the constants which appear in the discretized inequality one can formulate a curvature-dimension condition for graphs and study the properties of graphs which satisfy that condition. By constructing a cone over the vertices of a graph and restricting the curvature-dimension inequality to just the cone point, one can construct a Poincaré inequality for the underlying graph with an explicit constant that depends on the size of the vertex set. We refer to this restriction to just the cone point as a conical curvature-dimension condition and in this talk results that naturally devolve from the Poincaré inequality mentioned earlier will be presented.

For further information:
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