

Gaoyong Zhang

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will speak on

Affine sharp Sobolev and isoperimetric inequalities

ABSTRACT: The equivalence of the sharp Sobolev inequality and the Euclidean isoperimetric inequality is an amazing connection between analysis and geometry discovered in the 1950's. It has been proved recently that there is a deeper connection involving new affine geometric and analytic invariants. This leads to sharp Sobolev inequalities that are affine and stronger than classical Sobolev inequalities. The associated new geometric inequality is an affine isoperimetric inequality of convex bodies that is related to the p -cosine transform and is stronger than the Euclidean isoperimetric inequality. The proof of the equivalence uses the solution of a Monge-Ampere equation — the p -Minkowski problem of convex bodies.

MONDAY, 26 OCTOBER 2009

LECTURE AT 4:00 PM

COFFEE, TEA, AND REFRESHMENTS FROM 3-5 PM

ROOM 617, WACHMAN BUILDING

DEPARTMENT OF MATHEMATICS