Department of Mathematics
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Jiewon Park - Caltech

FELIX KLEIN SEMINAR

Speaker: Jiewon Park
Caltech

Date: Thursday, September 10, 2020

Time: 2:00 PM

Location: Zoom

Zoom URL: notredame.zoom.us/meeting/register/tJYlf-iupzwqGNHIvFipFjJQT-gn9W11CYT7

Lecture Title:

Geometric applications of the Laplace equation on Ricci-flat manifolds

Abstract

I will discuss the Laplace equation on a complete Ricci-flat manifold with Euclidean volume growth. In the case when a tangent cone at infinity of the manifold has smooth cross section, the Green function for the Laplace equation can be used to define a functional which measures the distance between a certain scale of the manifold and the cross section of the tangent cone. Using the Łojasiewicz inequality of Colding-Minicozzi for this functional, we describe how two arbitrarily far apart scales in the manifold can be identified in a natural way. I will also discuss a matrix Harnack inequality for the Green function when there is an additional condition on sectional curvature, which is an analogue of various matrix Harnack inequalities obtained by Hamilton and Li-Cao in time-dependent settings.