2013 Taiwan International Conference on Geometry

Mini-Course:

Scalar Curvature and the Einstein Constraint Equations

given by

Justin Corvino (Lafayette College) &

Pengzi Miao (University of Miami)

Description:

In this six-lecture mini-course, we will examine aspects of the role of the scalar curvature in the geometry and analysis of solutions to the Einstein constraint equations. After a brief overview of the setting of the Einstein constraint equations in general relativity, we will discuss various aspects relating scalar curvature to the boundary geometry of bounded domain (extended body) in an initial data set, as well as to the asymptotics of spaces which model isolated gravitational systems. We will emphasize connections between the notion of energy and the geometry of initial data sets.

Program:

Day 1	Introduction to the Einstein constraint equations and the Positive Mass Theorem (Corvino)
	The Positive Mass Theorem with corners (Miao)
Day 2	Asymptotics of initial data sets I (Corvino)
	On boundary effect of scalar curvature I (Miao)
Day 3	Asymptotics of initial data sets II (Corvino)
	On boundary effect of scalar curvature II (Miao)

Time:

Day 1 (Dec. 10, Tue) 09:00 – 12:00

Day 2 (Dec. 11, Wed.) 09:00 – 12:00

Day 3 (Dec. 13, Fri.) 13:30 – 16:30

Venue: R440, Astro-Math Building (NTU Campus)

Organized by:

Yng-Ing Lee (National Taiwan University)

Mu-Tao Wang (Columbia University)

Sponsored by:

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