Department of Mathematics
University of Notre Dame

Catherine Searle - Wichita State University

FELIX KLEIN SEMINAR

Speaker: Catherine Searle
Wichita State University

Date: Thursday, November 11, 2021

Time: 2:00 PM

Location: 258 Hurley Hall

Zoom URL: https://notredame.zoom.us/j/98367997958?pwd=WmFIa0hXWFIndlh2R1RIbXVqYWhEUT09

Lecture Title:

Positive (p, n)-intermediate scalar curvature and cobordism

Abstract

We consider a well-known construction due to Gromov and Lawson, Schoen and Yau, Gajer, and Walsh which allows for the extension of a metric of positive scalar curvature over the trace of a surgery in codimension at least 3 to a metric of positive scalar curvature which is a product near the boundary. We generalize this construction to work for (p,n)-intermediate scalar curvature for $0 \leq p \leq n-2$ for surgeries in codimension at least p+3. We then use it to generalize a well known theorem of Carr. Letting $\mathcal{R}^{\int_{\sqrt{'}\setminus}>'}(\mathcal{M})$ denote the space of positive (p,n)-intermediate scalar curvature metrics on an n-manifold M, we show for $0 \leq p \leq 2n-3$ and $n \geq 2$, that for a closed, spin, $(4n-1)$-manifold M admitting a metric of positive $(p, 4n-1)$-intermediate scalar curvature, $\mathcal{R}^{\int_{\sqrt{'}\Delta\setminus-\infty}>'}(\mathcal{M})$ has infinitely many path components. This is joint work with Matthew Burkemper and Mark Walsh.