A joint session of SMSS Colloquium with Mathematical Physics seminar

UTRGV
School of Mathematical & Statistical Sciences

Spectral Asymptotics and Sharp Weyl Formula For Operators On Asymptotically Euclidean Manifolds

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Abstract

I will illustrate the asymptotic behaviour of the eigenvalue counting function for self-adjoint, positive, elliptic linear operators, defined through classical weighted symbols of order (1, 1), on an asymptotically Euclidean manifold X. We first prove a two term Weyl formula, improving previously known remainder estimates. Subsequently, we show that, under a geometric assumption on the Hamiltonian flow at infinity, there is a refined Weyl asymptotics with three terms. Finally, we illustrate the results by analysing the operator $\mathrm{op}^w(q)$ on $\mathbf{R}^d$, with $q(x, \xi) = (1 + |x|^2)(1 + |\xi|^2)$. This is joint work with Moritz Doll.

Short Bio

Dr. Sandro Coriasco is an associate professor in the Department of Mathematics "Giuseppe Peano" of University of Turin (Universit`a degli Studi di Torino). Dr. Coriasco earned his PhD from Sapienza University of Rome. His research interests include PDEs, Stochastic PDEs, Analysis on noncompact manifolds, Analysis on singular manifolds, Fourier analysis, Pseudo-differential and Fourier integral operators. He has more than forty publications in high-quality journals, such as the Journal of Fourier Analysis and Appl., Ann. Henri Poincar´e, Ann. Mat. Pura Appl., Nonlinear Anal., J. Func. Anal., Trans. Amer. Math. Soc., J. Diff. Equations, Gen. Relativity Gravitation, Comm. Partial Differential Equations.

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Time: 1:30PM-2:30PM CT
Room: EMAGC 1.302
Zoom Link: https://utrgv.zoom.us/j/89957136043

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