Colloquium

UTRGV
School of Mathematical & Statistical Sciences

Algebraic geometry, complex analysis and combinatorics in spectral theory of periodic graph operators

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Abstract

In this talk, we will discuss the significant role that the algebraic and analytic properties of complex Bloch and Fermi varieties play in the study of periodic operators. I will begin by highlighting recent discoveries about these properties, especially their irreducibility. Then, I will show how we can use these findings, together with techniques from complex analysis and combinatorics, to study spectral and inverse spectral problems arising from periodic operators.

Short bio

Dr. Wencai Liu is an associate professor in the Department of Mathematics of Texas A&M University - College Station. His research interests include algebraic geometry, combinatorics, complex analysis, spectral theory, Riemannian manifolds, and KAM theory in Hamiltonian PDEs. He has nearly fifty publications in high-quality journals, such as Ann. Math., Adv. Math., Comm. Pure Appl. Math., Trans. AMS., J. Func. Anal., and Comm. Math. Phys.

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Time: 2:00 pm - 3:00 pm
Location: EMAGC 2.418
Zoom Link: https://utrgv.zoom.us/j/88679959318

For further information or for special accommodations, please contact Dr. Alexey Glazyrin via email alexey.glazyrin@utrgv.edu and Dr. Zhaosheng Feng via email zhaosheng.feng@utrgv.edu.