Harmonic and Spectral Analysis

International Zoom Conference

December 2–4, 2026

Both directions of Fuglede's conjecture fail in dimension two

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Fuglede's conjecture asserts that a measurable set of positive and finite measure is spectral if and only if it tiles Euclidean space by translations. Counterexamples have long been known in every dimension $d \geq 3$. In this talk, I will present counterexamples in dimension two and explain how I constructed them, highlighting the key ideas that led to their discovery.

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