Rings & Wings

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Title: A Dynamical Perspective on Leavitt Path Algebras

Abstract: There is a long-standing recognition that purely infinite simple Leavitt path algebras and symbolic dynamics speak a similar language. In this talk, we'll explore the connection via a representation of a Leavitt path algebra $L_R(E)$ as a subalgebra of endomorphisms on a free module built from the edge shift X_E of a finite directed graph E. We explicitly define the algebra via ideas from topology and dynamics—like continuity and orbits—to show how the algebraic structure emerges from the graph's dynamical behavior. Our aim, only partially realized, is to offer a framework that makes it easier to translate ideas between the worlds of algebra and dynamics.