MATTHEW KENNEDY, University of Waterloo

Wandering vectors and the reflexivity of free semigroup algebras

A free semigroup algebra $\mathcal{S}$ is the weak-operator-closed (non-self-adjoint) operator algebra generated by n isometries with pairwise orthogonal ranges. A unit vector x is said to be wandering for $\mathcal{S}$ if the set of images of x under non-commuting words in the generators of $\mathcal{S}$ is orthonormal.

In this talk, we present the following dichotomy: either a free semigroup algebra has a wandering vector, or it is a von Neumann algebra. Consequences include that every free semigroup algebra is reflexive, and that certain free semigroup algebras are hyper-reflexive with a very small hyper-reflexivity constant.