
KUNTAL BANERJEE, University of Saskatchewan

A generalized spectral correspondence

We explore a strong categorical correspondence between isomorphism classes of sheaves of arbitrary rank on a given algebraic curve and twisted pairs on another algebraic curve. We aim to generalize the language of classical spectral correspondence by the annihilating polynomials of pairs. In a particular application, we realize a generic elliptic curve as a spectral cover of the complex projective line and then construct examples of cyclic twisted pairs and co-Higgs bundles on the same curve. Afterwards, by appealing to a composite push-pull projection formula, we explore an iterated version of spectral correspondence for a particular class of spectral covers of the complex projective line through Galois-theoretic arguments. Our explanation relies upon a classification of Galois groups into primitive and imprimitive types. In this context, we revisit a classical theorem of Ritt. This is a joint work with Steven Rayan.