

Additive frieze patterns and polytopes

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Frieze patterns of integers were first studied by Coxeter and Conway-Coxeter in the 1970s from a combinatorial perspective. Since the 2000s they had a remarkable renaissance in cluster theory, in particular, in connection with cluster categories of type A.

In this talk, we consider the variant of nonnegative additive frieze patterns. Our goal is to find a representation theoretic interpretation of these friezes through a root category as well as a way to enumerate them. Therefore we consider associahedra coming from the cluster category, which lead us to a construction of an associahedron for our root category.

This is joint work with Asilata Bapat, Véronique Bazier-Matte, Kunda Kambaso, Bethany Marsh, and Yadira Valdivieso.