BRIN MATHEMATICS RESEARCH CENTER

UNIVERSITY OF MARYLAND 1856

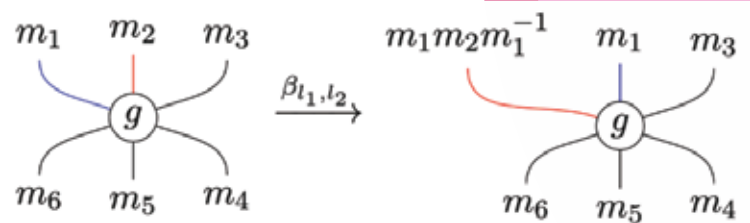# Geometry and Representation Theory Associated to G-Torsors on Curves

April 21-25, 2025

ABOUT THE WORKSHOP

In the past decades, the theory of moduli spaces of bundles over algebraic curves has played a central role in various branches of mathematics, with deep ties to very active areas of research such as topological field theories, the Langlands program, and representation theory of affine Lie algebras. A crucial ingredient that unifies several refinements of the theory came into focus recently: torsors for parahoric Bruhat-Tits group schemes. This gives a uniform approach to level structures, parabolic bundles, Prym varieties, and the structures underlying twisted conformal blocks from conformal field theory.

$$\overline{\mathcal{M}}^{\Gamma}_{X,\mathbf{m},\mathbf{b}} := \prod_{v \in V(X)} \overline{\mathcal{M}}^{\Gamma}_{w(v),L_v}(\mathbf{m}|_{L_v}),$$

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