From G-equivariantization to the Category of Wilson Lines and Back Again

Abigail Watkins

Indiana University

In a construction motivated by topological field theory, a collection of algebraic data called an orbifold datum $\mathcal{A}$ in a ribbon category $\mathcal{C}$ allows one to define a new ribbon category $\mathcal{C}_{\mathcal{A}}$. Another well-known construction of ribbon categories is G-equivariantization. If $\mathcal{C}$ is the neutral component of a G-crossed ribbon category $\hat{\mathcal{B}}$, and $\mathcal{A}$ is an orbifold datum in $\mathcal{C}$ defined in terms of $\hat{\mathcal{B}}$, one finds that $\mathcal{C}_{\mathcal{A}}$ is equivalent to the G-equivariantization $\hat{\mathcal{B}}^G$ of $\hat{\mathcal{B}}$ as a ribbon category. In this talk, we will describe this equivalence. This is joint work with Sebastian Heinrich, Julia Plavnik, and Ingo Runkel.

In Special Session 9 on Hopf Algebras and Tensor Categories at the Mathematical Congress of the Americas 2025.

MCA 2025 internal code: SS09-T22