



ALGEBRA AND GEOMETRY SEMINAR

The Hong Kong University of Science and Technology
Department of Mathematics

On a braided monoidal Hall 2-category

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Appearing in different incarnations, Hall algebras play an important role in classical representation theory. Broadly speaking, the Hall algebra construction associates to an abelian category A an algebra of functions on the moduli of objects $M(A)$ of A .

The goal of this talk is to describe a twofold categorification of the Hall algebra construction. This new construction associates to an abelian category A a lax-braided monoidal 2-category of 2-sheaves on $M(A)$. Even in the simplest case of the abelian category of vector spaces, this construction yields a rich and highly structured object. Focusing on this example, I will explain the construction in detail and describe why it is desirable from the perspective of categorified representation theory.

This is joint work with Quoc Ho, Yang Hu, and Walker Stern.

Room 3598 (Lift 27/28) Wed, Mar 11, 2026 04:00 PM

