Emergent Research:

The PIMS Postdoctoral Fellow Seminar

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Quantum symmetries of finite dimensional algebras

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ABSTRACT:
The classical notion of symmetry can be formalized by actions of groups. Quantum symmetry is a generalization of the notion of symmetry to the quantum setting, where symmetries can no longer be completely described by the actions of groups. In this setting, quantum symmetries are given by Hopf actions of quantum groups on algebras. I will start with background on quantum groups and Hopf actions and then give examples of quantum symmetries of quiver path algebras. Path algebras can be described in terms of directed graphs and play an important role in the representation theory of finite-dimensional algebras. While quantum symmetries are not straightforward to visualize, path algebras give us a nice tool for doing so. Then, I will discuss a tensor categorical perspective for understanding quantum symmetry and how this perspective can be applied to quantum symmetries of path algebras and finite-dimensional algebras.

SPEAKER BIO:
Amrei Oswald received their PhD from the University of Iowa in 2022. At the University of Iowa, they studied the representation theory of finite-dimensional algebras, Hopf algebras, and tensor categories under the supervision of Professor Ryan Kinser. They are currently a Postdoctoral Scholar at the University of Washington, where they are working with Professor James Zhang. Their current work continues the study of finite-dimensional algebras in a variety of settings, including understanding their cohomology, invariants, and quantum symmetries.

For more information and registration:
https://www.pims.math.ca/seminars/PIMSPDF

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