

**Title:** Compact quantum homogeneous spaces from subfactor planar algebras

**Speaker:** Frank Taipe (IMCA, Peru)

**Abstract:** This talk presents a framework for constructing compact quantum homogeneous spaces from the diagrammatic data of subfactor planar algebras. Using a Tannaka–Krein reconstruction approach, we interpret these planar algebras as models for weak unitary tensor functors on rigid  $C^*$ -tensor categories, from which compact quantum homogeneous spaces can be reconstructed. This perspective reveals a fundamental connection between the diagrammatic structure of subfactor planar algebras and the combinatorics of noncrossing partitions. By relating these structures to the representation theory of compact quantum groups, we obtain a categorical framework for constructing noncommutative spaces from diagrammatic models.

This is joint work with Simeng Wang (Harbin).