

Topology Seminar

Marcy Robertson

of The University of Melbourne will be speaking on

Expansions, completions and
automorphisms of welded tangled
foams

on October 26 at 4:30 in
MIT Room Zoom

Welded tangles are knotted surfaces in \mathbb{R}^4 . Bar–Natan and Dancs described a class of welded tangles which have foamed via a to–one correspondence between circuit algebras and a form of rigid tensor category called “wheeled props.” This is a known algebraic classification of planar algebras as certain pivotal categories.

This classification allows us to connect these “welded tangled foams,” to the Kashiwara–Vergne conjecture in Lie theory. In work in progress, we show that the group of homotopy automorphisms of the (rational completion of) the wheeled prop of welded foams is isomorphic to the group of symmetries KV, which acts on the solutions to the Kashiwara–Vergne conjecture. Moreover, we explain how this approach illuminates the close relationship between the group KV and the pro-unipotent Grothendieck–Teichmüller group.

For information, write: adelayyz@mit.edu