## WOLFGANG-PAULI-CENTRE

A COMPETENCE FIELD OF PIER



**Theoretical Physics Symposium 2023** 

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## Anyonic Chains and von Neumann algebras

Thursday 9 November 2023 13:40 (40 minutes)

Anyonic spin chains can be seen as lattice models where topological excitations are built in from the start. I will explain an intimate relationship between such models based unitary modular tensor categories, and the theory of von Neumann sub-factors. In particular, I will introduce a notion of (vertical) defects, which are shown to be governed by an algebraic structure isomorphic to that appearing in 1+1 rational conformal field theories, as developed by Fuchs et. al and by Kawahigashi et. al – despite the fact that anyonic chains are defined on finite lattices and may lead to gapped Hamiltonians in the scaling

limit. The talk is pedagogical and I emphasize structures that have not appeared previously in the physics literature.

Presenter: HOLLANDS, Stefan (U of Leipzig)