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SONDERKOLLOQUIUM

zur Ausschreibung – W2-Professur für theoretische Quanten-Vielteilchenphysik

14. April 2025 um 14:00 Uhr

BCTP, Wegelerstraße 10, Seminarraum I (2.019)

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Prof. Dr. David Mross

Weizmann Institute of Science (Rehovot, Israel)

Braiding New Frontiers: Advances and Challenges in Non-Abelian Anyons

Fractional quantum Hall states reveal remarkable phenomena that transcend the properties of their individual constituents. These states host emergent particles that can carry a fractional charge or obey exotic exchange statistics—neither bosonic nor fermionic. Recent interference experiments have directly confirmed these unusual properties across various filling factors and materials. The holy grail of this field is the detection and control of non-Abelian anyons—particles that retain a memory of their topological history. Braiding these anyons could enable the manipulation of quantum information with intrinsic error resistance. I will introduce the physics of these enigmatic particles and highlight recent theoretical and experimental developments that bring us closer to achieving this long-standing goal.

Join Zoom Meeting
https://uni-bonn.zoom-x.de/j/64252761213?pwd=U69G2w5W1mexudZUYI628jDZdXluNP.1

Meeting-ID: 642 5276 1213
Kenncode: 189923