ARNOLD SOMMERFELD
CENTER FOR THEORETICAL PHYSICS

LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN

Sommerfeld Theory Colloquium

Prof. Miguel Martin-Delgado

Universidad Complutense Madrid

Modern aspects of quantum physics and topology

Topology is one of the most recent branches of mathematics and has entered fully into the most modern aspects of theoretical physics: quantum computation. In this colloquium an elementary approach to the role of topology in quantum physics and its implications for exotic states of quantum matter is provided. Topology helps to solve the essential problem of quantum computation: to battle its fragility in order to benefit from its enormous potential possibilities. After showing topological color codes and their experimental realization, future challenges are addressed by fracton models involving the discovery of new quantum phases of matter beyond the well-known topological phases that were recognized with the Nobel Prize in Physics in 2016.

Wednesday, 14 June 2023, 16:15h, Room A348/and/via/Zoom, Theresienstr. 37/III

Prof. Lode Pollet and Ke Liu