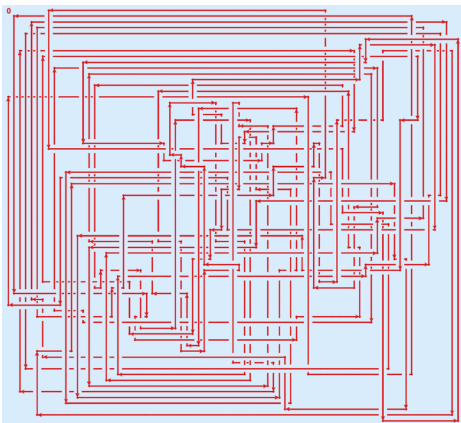


Tuesday 18 February 2025 - Morning Talks

Urania Berlin, Old Wing (Altbau), 3rd floor, An der Urania 17




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10:00 Marc Kegel *(HU Berlin)*

The search for exotic knot traces


Every knot leaves a trace in the 4-dimensional world. The trace of a knot is the smooth 4-manifold obtained by attaching a 2-handle to the 4-ball along a knot in the 3-sphere. Kegel will introduce the relevant notions and present a strategy to disprove the smooth 4-dimensional Poincaré conjecture by finding knot traces with certain exotic properties. In the second part of the talk, different methods to search for such exotic knot traces will be discussed.

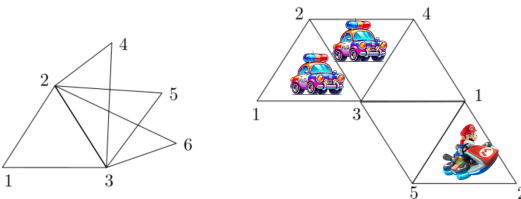
Marc Kegel is a postdoctoral fellow in Chris Wendl's working group at HU Berlin. His fields of interest include low-dimensional topology, contact geometry, symplectic topology and their interactions. 

10:30 Alexandra Wesolek *(TU Berlin)*

Cops and Robber on complete simplicial complexes

In the Cops and Robber game, k cops are trying to catch a robber. The cop number of a geodesic space is the smallest number of cops needed to come arbitrary close to the robber in the space. By using a generalized mirroring technique, we can show that the cop number of a complete simplicial complex is 2, where the simplices in the complex are represented as standard simplices. The talk is based on joint work with Bojan Mohar and Vesna Iršič Chenoweth.

Alexandra Wesolek is a Dirichlet postdoctoral fellow at TU Berlin and part of the discrete mathematics group of Stefan Elsner.



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