Berlin Mathematics Research Center
MATH+

Berlin Mathematical School
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Kovalevskaya Colloquium

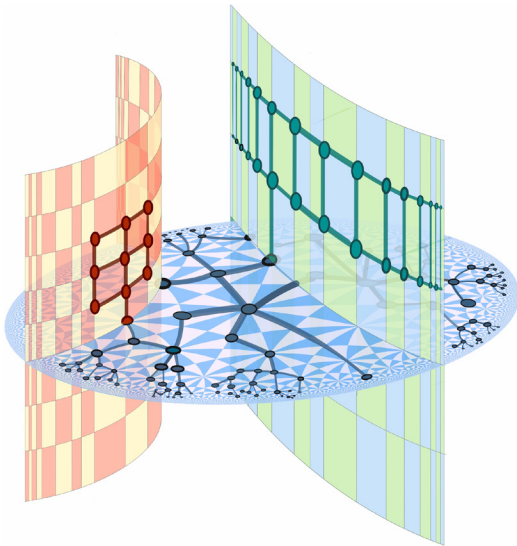## Friday 31 May 2024 at 14:15

TU Berlin, Physics Building, Hardenbergstraße 36, Room EW 201   *Tea & Cookies starting at 13:00*

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Anna Wienhard
(MPI Leipzig)

Beyond hyperbolic geometry

Euclidean geometry was already studied by the Greeks, but it took until the 19th century for hyperbolic geometry to be discovered. Since then, hyperbolic geometry has been ubiquitous, for example in the classification of surfaces and of three manifolds; it even found applications in machine learning.

Euclidean and hyperbolic geometry are just two examples of a much wider class of geometries of non-positive curvature. These non-positively curved geometries are often much more rigid, but combining them with hyperbolic groups opens up a completely new world in the study of Lie groups and their discrete subgroups. In this talk, Wienhard will take a tour leading from hyperbolic geometry into this new world.

Anna Wienhard is Director at the Max Planck Institute for Mathematics in the Sciences in Leipzig. Her interests lie in geometry, group theory and dynamics. She received her PhD in 2004 at the University of Bonn. Subsequently, she held positions at the Institute for Advanced Study in Princeton, the University of Chicago, Princeton University, and Heidelberg University. She was awarded an ERC Consolidator Grant, an ERC Advanced Grant, and the Hector Science Award 2022.