

BERNOULLIS TAFELRUNDE

GRADUATE STUDENT SEMINAR

Monday, 13 May 2024, 12:15-13:00
Seminarraum 05.002, Spiegelgasse 5

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Nash's isometric embedding

ABSTRACT

Is it possible to embed the flat torus in \mathbb{R}^3 while preserving the lengths of its curves? The classical representation of a torus as a donut shape fails in this regard due to the differing dilation along the two axes. In 1954 Nash showed that is it possible to embed the flat torus in \mathbf{R}^3 while preserving curve lengths. More precisely, he proved that any Riemannian manifold can be isometrically embedded in the Euclidean space \mathbb{R}^n , provided that n is large enough.

In this talk, we provide a general overview of the problem and we discuss some of the main ideas of the proof.