KTGU Special Lectures

Math + Science Innovation

スーパーグローバルコース数学特別講演会

ボン大学の Christian Scharrer 先生の講演が下記の日程で行われます。

Christian Scharrer
(University of Bonn)

日時：2025 年 2 月 20 日（木）
15：00～17：00

場所：理学研究科 3 号館 127 室

タイトル：Short closed geodesics and the Willmore energy

概要：

Consider a surface isometrically immersed into Euclidean space with the topology of a sphere. By a theorem of Birkhoff from 1917, such a surface contains a closed geodesic. In general, this geodesic might be very short. Its length can of course be bounded below by twice the injectivity radius of the surface. Lower bounds on the injectivity radius however are hard to come by and often require strong assumptions. For instance, by a theorem of Klingenberg from 1961, any closed surface whose Gauss curvature is pinched between 1/4 and 1, is a topological sphere with injectivity radius of at least pi. In order to obtain lower length bounds for closed geodesics, we recently discovered that the pointwise bound of Klingenberg on the Gauss curvature may be replaced by a bound on the Lebesgue 2-norm of the mean curvature. The latter is known as Willmore energy. In this presentation, I will introduce the Willmore energy and explain how it can be used to obtain sharp lower length bounds for closed geodesics, relating extrinsic with intrinsic geometry.

・本学の学生は申込不要です。

・本講演は京都大学のスーパーグローバル教育プログラム、スーパーグローバルコース（数学分野）の企画講演です。当コースについての詳細は https://www.math.kyoto-u.ac.jp/ja/ktgu/ktgu をご覧ください。