

Priv.-Doz. Dr. Fernando Galaz-García

KIT Karlsruhe

Smooth 2-torus actions on the 5-sphere

17. Dezember 2019 – 16.15 Uhr

Seminarraum IGT, Raum 7.530, Pfaffenwaldring 57

Abstract: Isometric torus actions on closed, simply-connected Riemannian manifolds with positive and non-negative sectional curvature have been extensively studied. In dimension 5, Rong proved that a closed, simply-connected Riemannian 5-manifold M with positive sectional curvature and an isometric action of the 2-torus must be diffeomorphic to the 5-sphere. In the case where M is assumed to have non-negative sectional curvature, Searle and I obtained a classification up to diffeomorphism of such manifolds. With these classification results in place, a next natural step is to classify all possible actions of the 2-torus on a given manifold. In this talk I will discuss the general equivariant classification of smooth 2-torus actions on the 5-sphere, as well as the equivariant classification of isometric 2-torus actions on a 5-sphere with a Riemannian metric with positive sectional curvature. This is joint work with Diego Corro and Martin Kerin.

