ORBIFOLDS WITH ALL GEODESICS CLOSED

MANUEL AMANN

The concept of a Riemannian orbifold generalises the one of a Riemannian manifold by permitting certain singularities. In particular, one is able to speak about several concepts known from classical Riemannian geometry including geodesics. Whenever all geodesics can be extended for infinite time and are all periodic, the orbifold is called a *Besse orbifold*—in analogy to Besse manifolds. A classical result in the simply-connected manifold case states that in odd dimensions only spheres may arise as examples of Besse manifolds.

In this talk we shall illustrate that the same holds for Besse orbifolds, namely that they are actually already manifolds whence they are spheres. The talk is based on joint work in progress with Christian Lange and Marco Radeschi.

MANUEL AMANN
INSTITUT FÜR MATHEMATIK
DIFFERENTIALGEOMETRIE
UNIVERSITÄT AUGSBURG
UNIVERSITÄTSSTRASSE 14
86159 AUGSBURG
GERMANY

manuel.amann@math.uni-augsburg.de
www.math.uni-augsburg.de/prof/diff/arbeitsgruppe/amann/

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