Seminario de Geometría y Topología

Construction of K-contact non-Sasakian 5-manifolds with first homology H1 = 0

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Resumen:

In this talk we adress the problem of finding 5-dimensional K-contact non-sasakian manifolds M with the lowest possible fundamental group.

This problem has two sides. One is the construction of a K-contact M satisfying certain conditions on its second homology, and other is to prove that this M cannot admit any Sasakian structure.

For this we use some topological methods to relate the topologies of M and the space of leaves X of the the Reeb circle action, and also some methods of algebraic geometry to impose further restrictions in the Sasakian case.

With these tools, we find the first example of a closed 5-manifold M with trivial first homolgy group which is K-contact but carries no semi-regular Sasakian structures.

Joint work with Vicente Munoz and Aleksy Tralle. .

Lugar: Universidad Complutense de Madrid
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