
JÉRÔME VETOIS, McGill University

Nonexistence of extremals for the second conformal eigenvalue in low dimensions

In this talk, we will consider the second conformal eigenvalue on a closed Riemannian manifold of positive Yamabe type and dimension greater than or equal to 3. The second conformal eigenvalue is defined as the infimum of the second eigenvalue of the conformal Laplacian in a conformal class of metrics with renormalized volume. We will discuss a recent result showing that this infimum is not attained for metrics close to the round metric on the sphere in dimensions 3 to 10, which contrasts sharply with the situation in dimensions greater than or equal to 11, where Ammann and Humbert obtained the existence of minimizers on any closed nonlocally conformally flat manifold. This is a joint work with Bruno Premoselli (Université Libre de Bruxelles).