Reidemeister torsión and zeta functions of Morse forms

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The Reidemeister torsion is an analogue of the Euler characteristic for combinatorial complexes, which depends also on a flat vector bundle. This topological invariant was able to distinguish homotopically equivalent 3-manifolds which are not homeomorphic. It has an analytic version due to Ray and Singer, which agrees with the combinatorial version when the flat vector bundle is unimodular. Otherwise, the difference between both torsions was described as the integral of a current in a deep theorem of Bismut and Zhang.

These definitions and result will be recalled in the presentation, and applied to describe the large spectrum contribution to certain zeta function associated to Morse forms on closed Riemannian manifolds. This zeta function is relevant because it shows up in certain dynamical trace formula for foliated flows.

Data: 9 de xuño

Lugar: Aula 8

Duración: 1 hora

Hora: 16:00 h