

THEMATIC SESSION: Noves tendències en Geometria Algebraica

**Hodge theory of abelian covers of algebraic varieties**

Eva Elduque (Universidad Autónoma de Madrid)

Let  $f : U \rightarrow G$  be an algebraic map from a smooth complex connected algebraic variety  $U$  to a complex semiabelian variety  $G$ . Using  $f$  to pull back the exponential map of Lie groups, one obtains a cover of  $U$  with free abelian deck transformation group which is a complex analytic manifold, although not algebraic in general. The homology groups of these covers generalize the classical Alexander invariants, which arise when  $U$  is an affine hypersurface complement and  $G$  is an algebraic torus. In this talk, we will talk about work in progress aimed at endowing the homology groups of these covers with canonical mixed Hodge structures.

This is joint work with Moisés Herradón Cueto.