

Department of Mathematics, BGU

Jerusalem - Be'er Sheva Algebraic Geometry Seminar

On Wednesday, November 4 2020

At 15:00 – 16:30

In

Marc Levine (Essen)

will talk about

Quadratic Euler characteristics of hypersurfaces and hypersurface singularities

Abstract: This is a report on joint work with V. Srinivas and Simon Pepin Lehalleur. Recently, with Arpon Raksit, we have shown that for a smooth projective variety X over a field k , the quadratic Euler characteristic of X , an element of the Grothendieck-Witt ring of quadratic forms over k , can be computed via the cup product on Hodge cohomology followed by the canonical trace map. Following work of Carlson-Griffiths, this leads to an explicit formula for the quadratic Euler characteristic of a smooth projective hypersurface defined by a homogeneous polynomial F in terms of the Jacobian ring of F , as well as a similar formula for a smooth hypersurface in a weighted projective space. In some special cases, this leads to quadratic versions of classical conductor formulas with some mysterious and unexpected correction terms, even in characteristic zero.