

First Joint Meeting Brazil Italy of Mathematics
Special Session, S6: Commutative Algebra and its
Interactions

Rio de Janeiro, August 29 - September 02, 2016

Title: Simple D-module components of local cohomology modules

Authors: Claudia Polini

A long standing problem in algebraic geometry and commutative algebra is to determine whether every irreducible curve in projective three-space is a set-theoretic complete intersection. One way to approach this problem is via the study of local cohomology modules. As modules over the ring, local cohomology modules are huge (neither finitely generated nor Artinian), hence intractable. However, as modules over the Weil algebra D they can be filtered by simple objects and become manageable. Hence an important task is to understand the D-module structure of local cohomology modules. In this talk we describe their simple D-module composition factors. This is joint work with Robin Hartshorne.