INSALATE DI MATEMATICA

presents

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Stable cohomology of the moduli space of trigonal curves

Abstract: The moduli space of algebraic curves is a central object in algebraic geometry. The idea behind this space is that it answers to a classification problem, by allowing us to classify algebraic curves up to isomorphisms. Nonetheless, the geometry of this space is rather abstract and subtle, and only few general statements are known. The aim of this talk is to discuss some moduli spaces of genus g curves, such as trigonal curves, from the point of view of one of the most important topological invariants, their rational cohomology. In general, their full cohomology ring is still unknown, but we have a complete description for some values of g and we will provide a description for their stable cohomology ring. This will be done by studying the natural embedding of trigonal curves in Hirzebruch surfaces and by using Gorinov-Vassiliev's method for the cohomology of complements of discriminants.

Keywords: Moduli space of curves · Trigonal curves · Rational cohomology · Hirzebruch surface · Gorinov-Vassiliev's method · Discriminants

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"Obvious" is the most dangerous word in mathematics.
(Eric Temple Bell)