

Oberseminar Topologie: 24.04.2024

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Title: Stable cohomology of moduli of smooth hypersurfaces

Abstract: The space of all smooth hypersurfaces of a given degree in a complex projective variety is itself a variety. I will explain how to understand some of its cohomology using tools from homotopy theory: smooth hypersurfaces are given by holomorphic sections of line bundles subject to a differential condition, and these can be compared to continuous sections of appropriate jet bundles. This strategy usually goes under the name of "h-principle", and we will see an algebraic instance of that. I will also explain some consequences: a cohomological stability phenomenon, and a relation to classifying spaces of diffeomorphism groups of hypersurfaces.