

Kempner Colloquium

DE RHAM COHOMOLOGY FOR ALGEBRAIC VARIETIES

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The topological cohomology of complex algebraic manifolds enjoys an extremely rich algebraic structure, traditionally the subject of Hodge theory. A key piece of this structure is Grothendieck's purely algebraic take on de Rham cohomology (together with the isomorphism between topological and de Rham cohomology for any manifold). I will begin by reviewing this picture, and then explain how the algebraic perspective leads to a “de Rham” description of the cohomology for algebraic varieties with arbitrary singularities. I will then discuss some consequences for Hodge theory over a p-adic field.

December 3, 2012

4:00 p.m.

MATH 350