Topology, Algebraic Geometry, & Dynamics Seminar

A gentle approach to crystalline cohomology

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Given a smooth algebraic variety X over C, a classical result of Grothendieck shows that one can recover the singular cohomology of X (with complex coefficients) using only algebraic differential forms. In characteristic p, the analogous construction also works but is less satisfactory: it produces only p-torsion cohomology groups. The de Rham-Witt complex (or crystalline cohomology) provides an integral lift, and yields one of the basic cohomology theories for varieties in characteristic p. In this talk, I will explain a new approach to the de Rham-Witt complex based only on elementary homological algebra. Joint work with Bhargav Bhatt and Jacob Lurie.

Date: Friday, February 28, 2020
Time: 1:30-2:30 pm
Place: 4106 Exploratory Hall

For special accommodations, please contact David Carchedi via email at dcarched@gmu.edu.