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Donaldson-Thomas Invariants: Classical, Motivic, Quadratic and Real

mardi 23 avril 2024 15:00 (1 heure)

Let X be a smooth projective 3-fold over the complex numbers. Following work of Thomas, Behrend-Fantechi, and others, one has a virtual fundamental class in the Chow group of 0-cycles on the Hilbert scheme of dimension 0, length n subschemes of X, the degree of which is the nth Donaldson-Thomas invariant of X. Now take X over an arbitrary field k. We have developed a construction of virtual fundamental classes with values in an arbitrary motivic cohomology theory. An example of such, a "quadratic" analog of the Chow groups, is the cohomology of the sheaf of Witt rings, which leads to a refinement of the classical DT-invariants to quadratic DT-invariants with values in the Witt ring of quadratic forms over k. We will discuss some developments and conjectures for these refined DT invariants, including some computations of the signature of these invariants due to Anneloes Viergever.

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