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Title: Torsion volume forms

Abstract:

Reidemeister torsion defines an element in the determinant line of a finite CW complex. I will explain its family version which allows one to define a volume form on a mapping stack whose source has a simple homotopy type. One family of examples is given by character stacks of finite CW complexes: for surfaces one recovers the symplectic volume form while for 3-manifolds one obtains orientation data necessary to define cohomological DT invariants. Another family of examples is given by the volume form on the derived loop space related to the Todd class. This is a report on work joint with Florian Naef.