Some finiteness properties for the Reidemeister-Turaev torsion of three-manifolds.

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The Reidemeister-Turaev torsion is an invariant of a closed oriented three-dimensional manifold equipped with an Euler structure, with values in the ring of quotients of the group ring of the first homology group. We will prove that its reductions by powers of the augmentation ideal are finite-type invariants in the sense of M. Goussarov and K. Habiro. For this, we will start off by explaining how their theory of finite-type invariants can be refined to take into account Euler structures (which is a joint work with F. Deloup).