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Donghao Wang* (donghaow@mit.edu). *Monopole Floer homology for 3-manifolds with toroidal boundary.*

The monopole Floer homology of a closed oriented 3-manifold was introduced by Kronheimer-Mrowka around 2007 and has greatly influenced the study of 3-manifold topology since its inception.

In this talk, we will generalize their construction and define the monopole Floer homology for any pair (Y, ω) , where Y is a compact oriented 3-manifold with toroidal boundary and ω is a suitable closed 2-form, which satisfies a reasonable (3+1) TQFT property. Its graded Euler characteristic recovers the Milnor-Turaev torsion invariant by a classical theorem of Meng-Taubes. (Received January 17, 2021)