

Stability and stable homology for moduli spaces of disconnected submanifolds

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Abstract.

Configuration spaces of unordered points in manifolds are important objects in mathematics, with connections to knot theory (via the braid groups), homotopy theory and algebraic geometry. By results of D. McDuff and G. Segal in the 1970s, their homology is known to *stabilise* as the number of points goes to infinity (if the ambient manifold is connected and open), and the corresponding *stable homology* (i.e. the homology in the limit) is also known.

One may consider a much more general and subtle setting where configurations of point-particles are replaced by moduli spaces of disjoint unions of closed submanifolds of specified diffeomorphism type and isotopy class. In this talk I will discuss (a) *homological stability* for these moduli spaces when the codimension is sufficiently large, (b) corollaries for diffeomorphism groups of manifolds with singularities and (c) work in progress on identifying the *stable homology* in these settings.

References.

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