

A sheaf-theoretic model for $SL(2, C)$ Floer homology

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I will describe joint work with Ciprian Manolescu on constructing an analogue of instanton Floer homology replacing the group $SU(2)$ by $SL(2, C)$. Having failed to do so using the standard Floer theoretic tools of gauge theory and symplectic topology, we turned to sheaf theory to produce an invariant. After describing our approach, I will discuss some features of this theory that are expected to be visible from a Floer-theoretic point of view, but that we cannot currently access.