1163-57-534 **Irving Dai**, **Matthew Hedden** and **Abhishek Mallick***, mallicka@msu.edu. *Corks, involutions and Heegaard Floer homology.*

We introduce and study a set of Floer-theoretic invariants aimed at detecting corks. Our invariants obstruct the extension of a given involution of a 3-manifold over any homology ball (rather than a particular contractible manifold). We call such a 3-manifold with involution a strong cork. Our method does not explicitly reference closed 4-manifolds or contact structures, instead, we utilize the formalism of local equivalence coming from involutive Heegaard Floer homology. As an application, we define a modification of the homology cobordism group $\Theta_{\mathbb{Z}}^{\tau}$ which takes into account involutions acting on homology spheres, and prove that this admits a $\mathbb{Z}^{\infty}$-subgroup generated by strong corks. The group $\Theta_{\mathbb{Z}}^{\tau}$ can be viewed as a refinement of the classical bordism group of diffeomorphisms. Using our invariants, we establish several new families of strong corks and prove that various known examples are also strong. (Received September 08, 2020)