

Symplectic Floer homology of pseudo-Anosov and reducible maps

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Symplectic Floer homology assigns to a symplectomorphism ϕ a $\mathbb{Z}/2$ -graded chain complex generated by the fixed points of ϕ with differentials given by counting holomorphic cylinders in $M_\phi \times \mathbb{R}$, where M_ϕ is the mapping torus of ϕ . The homology $HF_*(\phi)$ is invariant under certain deformations of ϕ . We show how to calculate $HF_*(\phi)$ using train tracks for ϕ any surface symplectomorphism in a pseudo-Anosov mapping class as well as for ϕ a reducible symplectomorphism satisfying a certain weak monotonicity condition. In combination with previous work by Seidel, Gautschi, and Eftekhary, this completes the computation of Seidel's $HF_*(g)$ for g any (oriented) mapping class. Our results also include surfaces with boundary.

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Math 507
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