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Mathematics > Geometric Topology

A rank inequality for the knot Floer homology of double branched covers

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Given a knot K in S^3, let Sigma(K) be the double branched cover of S^3 over K. We show there is a spectral sequence whose E^1 page is ($hat{HFK}$ (Sigma(K), K) $otimes V^{n-1}$) $otimes mathbb Z_2((q))$, for V a $mathbb Z_2$ -vector space of dimension two, and whose E^{ $infty}$ page is isomorphic to ($hat{HFK}(S^3, K)$ $otimes V^{n-1}$) $otimes mathbb Z_2((q))$, as $mathbb Z_2$ ((q))-modules. As a consequence, we deduce a rank inequality between the knot Floer homologies $hat{HFK}(Sigma(K), K)$ and $hat{HFK}(S^3, K)$.

Comments:Corrected an error in Corollary 1.3 (now split into Corollaries
1.3 and 1.4). Corrected typosSubjects:Geometric Topology (math.GT); Symplectic Geometry
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