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**Kristen Hendricks\*** ([hendricks@math.columbia.edu](mailto:hendricks@math.columbia.edu)). *Smith Inequalities for Knot Floer Homology of Branched Double Covers.*

In 1938, P. Smith proved that, given a space  $M$  with an involution  $\tau$ , the total rank of the singular cohomology of  $M$  is greater than or equal to the total rank of the singular cohomology of the invariant set  $M^{\text{inv}}$ . We discuss an analogous rank inequality for Heegaard Floer knot homology (an invariant of a knot  $K$  in a three-manifold  $Y$ ). To wit, given a knot  $K$  in  $S^3$  and of the lift of  $K$  in the branched double cover  $\Sigma(K)$  of  $S^3$  over  $K$ , we explain how a natural involution on the symmetric product of a Heegaard surface for  $(\Sigma(K), K)$ , together with recent work of Seidel and Smith, can be used to show the rank of the knot Floer homology of  $(\Sigma(K), K)$  is greater than or equal to the rank of the knot Floer homology of  $(S^3, K)$ . (Received January 08, 2012)