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τ -invariants for knots in rational homology spheres.

Using the knot filtration on the Heegaard Floer chain complex, Ozsváth and Szabó defined an invariant of knots in the 3-sphere called $\tau(K)$, which they showed is a lower bound for the 4-ball genus of K . Generalizing their construction, I will show that for a (not necessarily null-homologous) knot, K , in a rational homology sphere, Y , we can define a collection of τ -invariants, one for each spin-c structure on Y . In addition, these invariants give a lower bound for the genus of a surface with boundary K properly embedded in a negative definite 4-manifold with boundary Y . (Received July 24, 2017)