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d-invariants of double branched covers of links

Using Heegaard Floer homology, one can associate to a rational homology 3-sphere Y , equipped with a spin^c -structure \mathfrak{s} , a rational number, commonly referred to as the d -invariant of (Y, \mathfrak{s}) . d -invariants have been useful in answering a range of questions in low-dimensional topology. A nice source of rational homology 3-spheres comes from considering double branched covers $\Sigma_2(K)$ of knots K in S^3 . If $\Sigma_2(K)$ is an L-space, then the d -invariant of $\Sigma_2(K)$, at the unique spin-structure \mathfrak{s}_0 , is well-understood: Lin-Ruberman-Saveliev in 2020 showed that it's a multiple of the signature of K .

When the branch set is a quasi-alternating link, the d -invariants of the double branched cover can be recovered from the signatures of the link in a similar way; this is due to Lisca-Owens in 2015. In this talk, we show that a similar phenomenon holds for branching over certain families of non-quasi-alternating links. This is work in progress with M. Marengon.