

Invariants of homology cobordism and link concordance from towers of iterated abelian p -covers

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Abstract. We consider Witt class defect invariants of 3-manifolds extracted from towers of iterated abelian p -covers. We show the invariance under homology cobordism and link concordance.

We discuss the following applications: (1) A construction of rational homology 3-spheres which are not homology cobordant but indistinguishable via known signature invariants. (2) The first proof that the figure eight knot (and certain amphichiral knots) has non-slice Bing double. (3) The existence of "torsion" elements in an arbitrary depth of the Cochran-Orr-Teichner solvable filtration of link concordance.