

**FINITE GROUP ACTIONS ON HOMOLOGY 3-SPHERES
AND CYCLIC BRANCHED COVERINGS OF KNOTS AND
LINKS**

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We report on recent work on the determination of the finite groups which admit actions on integer and $\mathbb{Z}/2$ -homology 3-spheres. We apply this to the following problem: how many different knots in the 3-sphere can have the same hyperbolic 3-manifold M as their common 2-fold branched covering, and how are these related.

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