

The Big Dehn surgery graph and the link of S^3

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A foundational result of Lickorish and Wallace allows one to create a connected graph where the vertices correspond to closed orientable 3-manifolds and the edges correspond to the existence of a Dehn surgery. This graph was first considered by W. Thurston. We will restate old results and questions in the context of this graph and give some new results and questions related to this graph. For example, we show that there are hyperbolic manifolds with weight one fundamental group which are not obtained via surgery on a knot in S^3 . We also show that the graph is not Gromov-hyperbolic and discuss some interesting subgraphs. This is joint work with Neil Hoffman.