

Dehn Surgery and 3-Manifolds Exercise Set #4

Exercise 1: Let $\langle \mu', \lambda' \rangle$ be a basis of the boundary of the solid torus glued in via surgery for $S_{m/l}^3(T_{p,q})$. Find the coefficient of λ' for the curve that is mapped to F under the surgery instruction.

Exercise 2: Discuss the details of Moser's theorem.

Exercise 3: Let K be the figure-8 knot. Show that $S_4^3(K)$ contains a Klein bottle and conclude that the manifold is not hyperbolic.

Exercise 4: Why is $S_0^3(K)$ irreducible for a non-trivial knot K ?