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3-Pure Braids and Surgery

Let **L** be the set of links obtained as the closure of 3-pure braids. We are interested in knowing when it is possible to obtain a simply connected 3-manifold by integral Dehn surgery (m, n, p) on an element of **L**, and then in determining if such manifold is S^3.

Let L be any link in **L**, we calculate the μ-invariant of the Z_2-homology spheres and the Casson's invariant of the Z-homology spheres obtained by surgery on L. Also, we will see that it is not possible to obtain a simply connected 3-manifold on some families of **L**.