

1039-57-16

Steven D. Wallace*, Department of Mathematics, Louisiana State University, Baton Rouge, LA 70803. *A₄-colored knots and their surgery equivalence.*

The pair (K, r) consisting of a knot in the three-sphere and a representation of the knot group onto the alternating group on four letters is said to be an A_4 -colored knot. We establish lower and upper bounds for the equivalence classes of A_4 -colored knots up to surgery along unknots representing elements in the kernel of r . Such surgeries preserve A_4 -colorability. This is an analog to the classical result that every knot has a “surgery description” or equivalently that every knot is surgery equivalent to the unknot if we place fewer restrictions on the allowed surgery curves. We do this by defining a complete invariant for A_4 -colored surgery equivalence. (Received February 09, 2008)