

1094-51-208

Shane D’Mello* (shane@math.sunysb.edu), The Mathematics Department, Stony Brook University, Stony Brook, NY 11794-3651. *Rigid isotopy classification of real rational knots in the 3-sphere.*

The 3-sphere can be realized as a quadric in \mathbb{RP}^4 that is defined as the zero set of the homogeneous polynomial $x_1^2 + x_2^2 + x_3^2 + x_4^2 - x_0^2 = 0$. We can then consider knots in the 3-sphere that can be realized as the image of a regular map $k : \mathbb{RP}^1 \rightarrow \mathbb{RP}^4$. The additional algebraic structure allows one to define invariants that would not have been possible for classical knots, like the encomplexed writhe number that was defined by Oleg Viro. We will define the rigid isotopy of real rational knots and complete the rigid isotopy classification of all real rational non-singular knots of degrees 6 and less. (Received August 23, 2013)