962-57-94 Jim Hoste (jhoste@pitzer.edu), Pitzer College, 1050 N. Mills Ave., Claremont, CA 91711, and Patrick D Shanahan* (pshanaha@lmu.edu), Loyola Marymount University, Dept. of Mathematics MC 8130, 7900 Loyola Blvd., Los Angeles, CA 90045-8130. Trace Fields of Twist Knots.

We show how to compute the trace field for the family of hyperbolic twist knots. We describe this field as a simple extension $\mathbb{Q}(z_0)$ where z_0 is a specified root of a particular irreducible polynomial $\Phi_n(z) \in \mathbb{Z}[z]$. As a consequence, we find that the degree of the trace field is related to the crossing number of a twist knot in a simple way, and that this degree approaches infinity as the crossing number approaches infinity. (Received July 28, 2000)