

On a characterization of the Alexander polynomials of alternating knots of genus two

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We give a family of linear inequalities on the coefficients of the Alexander polynomials of alternating knots of genus two. The family gives one of the best estimations of them. We also give such families for positive knots of genus two, and for homogeneous knots of genus two.

One of the problems we are interested in is a characterization of the Alexander polynomial of an alternating knot. As an approach to this problem, we detect whether each of the Alexander polynomials $\Delta(t) = \sum_{i=0}^4 a_i t^i$ with $|a_0| \leq 10$ is realized as that of an alternating knot.