The $SL(2, \mathbb{C})$ Character Variety of a Class of Torus Knots

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Abstract: Let $K_{\frac{m}{2}}$ be the torus knot of type $(m, 2)$. It is well-known that the fundamental group of $S^3 \setminus K_{\frac{m}{2}}$ is $G = \langle A, B \mid A^m = B^2 \rangle$. In this paper we obtain a defining polynomial of the character variety $X(G)$ which allows us to give an easy geometrical description of it.

Key words: Torus knot, character variety

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