

CHARACTER VARIETIES IN KNOT THEORY

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Given an algebraic group G and a knot $K \subset \mathbb{R}^3$, we define the G -character variety of K as the moduli of representations $\rho : \pi_1(\mathbb{R}^3 - K) \rightarrow G$ of the knot group into G . The importance of these varieties lies in the fact that their study provides in a natural way many knot invariants. In this talk, we will introduce one of the most important of these invariants, the E -polynomial, exposing the techniques used to study them, as well as the main results known, focusing specially on the case of torus knots.