

Character varieties for unitary groups

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We study the geometry of the character variety of representations of a punctured Riemann surface to unitary groups by counting points over finite fields F_q . We observe a geometric incarnation of Ennola's duality (q maps to $-q$) in the character theory of $U_n(F_q)$ that relates it to that of $GL_n(F_q)$. The results can be expressed in terms of multiplicities in the decomposition of a tensor product of representations of $U_n(F_q)$. This is joint work with Emmanuel Letellier.