1019-51-17 **Sean Dodd Lawton*** (slawton@math.ksu.edu), Mathematics Department, Kansas State University, 138 Cardwell Hall, Manhattan, KS 66506. *Poisson Structure on SL(3)-Character Varieties Relative to a Punctured Surface.*

Representations of the fundamental group of a punctured surface into $\mathrm{SL}(3,\mathbb{C})$ form an affine variety. The conjugacy classes of the completely reducible representations further forms an algebraic quotient, $\mathfrak{X}$, which has the structure of a Poissson variety. In the case of a once punctured torus or a thrice punctured sphere, we show $\mathfrak{X}$ is a degree 6 hyper-surface in $\mathbb{C}^9$ surjecting onto $\mathbb{C}^8$ and exhibiting 8-fold symmetry. When the surface is a thrice punctured sphere we work out the explicit form of the Poisson bracket. (Received June 20, 2006)