

1176-54-25

Mark A Ronnenberg* (maronnen@iu.edu), 831 E 3rd Street, Bloomington, IN 47401.

Prequantum Bundle on the Traceless Character Variety of a Surface with Boundary.

Traceless character varieties of 2 and 3-manifolds arise in the construction of Kronheimer-Mrowka's singular instanton homology. The traceless character variety of a (punctured) surface is a stratified space, whose top stratum is a smooth symplectic manifold. Several authors, for example Hedden-Herald-Kirk, have begun to work out a Lagrangian Floer homology theory for traceless character varieties, with the aim of proving that such a homology is isomorphic to singular instanton homology (a version of the Atiyah-Floer conjecture). Their construction involves decomposing a link in a 3-manifold into two tangles. A prequantum bundle is a principal $U(1)$ -bundle over a symplectic manifold, equipped with a connection whose curvature induces the symplectic form on the base space. In this talk, I will describe how to construct a prequantum bundle over the traceless character variety of a surface with boundary, albeit with a slightly different symplectic form, in a way that is tailored to 3-manifolds containing a tangle. (Received January 03, 2022)