

1138-53-133

Benjamin C. Sibley* (bsibley@math.umd.edu). *A complex analytic structure on the compactification of Hermitian-Yang-Mills moduli space.*

A key aspect of gauge theory is finding a suitable compactification for the moduli space instantons. For instantons on higher dimensional manifolds, a rough compactification has been defined by Tian, analogous to Uhlenbeck's compactification of the moduli space of anti-self-dual connections on a four-manifold. In the case when the base manifold is Kähler, and the bundle in question is hermitian, instantons which are unitary and give rise to a holomorphic structures are Hermitian-Yang-Mills connections. A sequence of such connections is known to bubble at most along a codimension 2 analytic subvariety, and so one might hope that the resulting compactification has the structure of a complex analytic space. I will attempt to explain why this true in the case when the base is projective. This gives a higher dimensional analogue of a theorem of Jun Li for algebraic surfaces. This is joint work in progress with Daniel Greb, Matei Toma, and Richard Wentworth. (Received February 07, 2018)