

1108-58-433

Steven Bradlow* (bradlow@uiuc.edu), department of mathematics, UIUC, urbana, IL 61801,
and **Laura Schaposnick**. *Higgs bundles, spectral data, and isomorphisms among low dimensional
Lie groups*. Preliminary report.

We will explore some interesting relations among Higgs bundles, from the point of view of spectral data, that result from special isomorphisms among low dimensional Lie algebras and Lie groups.

Higgs bundles provide an algebro-geometric description of surface group representations into complex reductive Lie groups, and also into their real forms, say G . The defining data for such G -Higgs bundles can be given as a closed Riemann surface (Σ) , a holomorphic principal bundle $(E \rightarrow \Sigma)$, and a Higgs field (Φ) which is a holomorphic section of an associated vector bundle. Alternatively, in many cases the defining data can be encoded in a ramified cover $S \rightarrow \Sigma$ (the spectral curve) and a line bundle in a component of the Jacobian of the spectral curve. The resulting spectral data sets depend on the curve Σ and the group G . If two groups, say G_1 and G_2 , are related by a group homomorphism, one can expect the corresponding Higgs bundles and their spectral data sets to inherit induced relationships. We will explore this phenomenon in the case of isogenies resulting from accidental isomorphisms among low dimensional lie algebras. (Received January 19, 2015)