1122-57-295 **Cristopher Scaduto** (cscaduto@brandeis.edu) and **Matthew Stoffregen*** (mstoffregen@math.ucla.edu). *Klein-four connections and the Casson invariant for non-trivial admissible $U(2)$ bundles.*

Given a rank 2 hermitian bundle over a 3-manifold that is non-trivial admissible in the sense of Floer, one defines its Casson invariant as half the signed count of its projectively flat connections, suitably perturbed. We show that the 2-divisibility of this integer invariant is controlled in part by a formula involving the mod 2 cohomology ring of the 3-manifold. This formula counts flat connections on the induced adjoint bundle with Klein-four holonomy. We will also discuss a generalization of these results to higher-rank bundles. (Received August 15, 2016)