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Scaled Ginzburg-Weinstein Isomorphisms and Concentration of Volumes in K/T

This talk is a continuation of the talk by Y. Li. It is based on joint work with A. Alekseev, B. Hoffman, and Y. Li. See arXiv:1804.01504 and arXiv:1808.06975.

A theorem of Ginzburg and Weinstein (1993) says that for K a compact, connected, and simply connected semisimple Lie group, the Poisson manifolds $\mathfrak{k}^*$ and K^* are Poisson isomorphic (when equipped with their natural Poisson structures). A scaled Ginzburg-Weinstein isomorphism is a Poisson isomorphism of $\mathfrak{k}^*$ and K^* when the Poisson structure on K^* is scaled by a factor of s.

One can compose scaled Ginzburg-Weinstein isomorphisms with certain scaled cluster coordinates introduced in the previous talk (using the same scaling parameter for both maps). It is conjectured that the limit as s goes to infinity of this composition is a Poisson isomorphism from an open dense subset of $\mathfrak{k}^*$ to the Poisson manifold $\mathrm{PT}(K^*)$.

This talk will present progress towards this conjecture. In particular, we present a result on concentration of volumes in the Poisson homogeneous space K/T.