Large toric charts on coadjoint orbits

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A toric chart is a product UxT^n of an open subset $U \subset R^n$ and a torus T^n endowed with the standard symplectic structure. We consider toric charts on coadjoint orbits of compact Lie groups. The standard example is given by Gelfand-Zeitlin integrable systems which provide dense toric charts on coadjoint orbits of SU(n).

We suggest a new method of constructing large (covering the part of sympletic volume arbitrarily close to 1) toric charts on coadjoint orbits. Our main tools are the theory of Poisson-Lie groups, cluster algebra techniques, tropicalization and the Berenstein-Kazhdan potential.

As an application, we prove an exact bound on the Gromov width of the coadjoint orbitrs in some new situations.

The talk is based on a joint work with B. Hoffman, J. Lane and Y. Li.