1072-51-111 **Milena D Pabiniak*** (mdp72@cornell.edu). *Lower bounds for Gromov width of coadjoint orbits in U(n).*

We use the Gelfand Tsetlin pattern to construct an effective Hamiltonian, completely integrable action of a torus $T = T^D$ on an open dense subset of a coadjoint orbit of $U(n)$ and we obtain a proper Hamiltonian T-manifold centered around a point in $\mathfrak{t}^*$. The result of Karshon and Tolman says that such a manifold is equivariantly symplectomorphic to a particular subset of $\mathbb{R}^{2D}$. This fact enables us to construct symplectic embeddings of balls into a class of coadjoint orbits of $U(n)$ and therefore obtain a lower bound for their Gromov width. Using the identification of $\mathfrak{u}(n)^*$ with the space of $n \times n$ Hermitian matrices, the main theorem states that for a coadjoint orbit through $\lambda = \text{diag}(\lambda_1, \ldots, \lambda_n) \in \mathfrak{u}(n)^*$, with $\lambda_1 > \lambda_2 > \ldots > \lambda_l = \lambda_{l+1} = \ldots = \lambda_{l+s} > \lambda_{l+s+1} > \ldots > \lambda_n$, $s \geq 0$, the lower bound for Gromov width is equal to the minimum of differences $\lambda_i - \lambda_j$, over all $\lambda_i > \lambda_j$. For a generic orbit, with additional integrality conditions, this minimum was proved to be exactly the Gromov width of the orbit. For nongeneric orbits this lower bound is new. (Received June 23, 2011)