1031-53-91 **Alvaro Pelayo*** (apelayo@math.mit.edu), Massachusetts Institute of Technology, Department of Mathematics, 77 Massachusetts Avenue, Cambridge, MA 02139-4307, and **Benjamin Schmidt**, University of Chicago. *Maximal toric packings of symplectic-toric manifolds.*

We explain how the set of symplectic-toric ball packings of a symplectic-toric manifold of dimension at least four admits the structure of a convex polytope. Using this we will show that for each $n \geq 2$ and each $\delta \in (0, 1)$ there are uncountably many inequivalent $2n$-dimensional symplectic-toric manifolds with a maximal toric packing of density $\delta$. This result follows from a general analysis of how the densities of maximal packings change while varying a given symplectic-toric manifold through a family of symplectic-toric manifolds that are equivariantly diffeomorphic but not equivariantly symplectomorphic. Our theorem is in contrast with a previous result of the presenter: up to equivalence, only $(\mathbb{CP}^1)^2$ and $\mathbb{CP}^2$ admit density one packings when $n = 2$ and only $\mathbb{CP}^n$ admits density one packings when $n > 2$. (Received August 05, 2007)