1131-37-257 **Sean Bauer** and **Nikola P Petrov*** (npetrov@ou.edu), Department of Mathematics, University of Oklahoma, 601 Elm Ave, Norman, OK 73019. *KAM tori for presymplectic vector fields.*

Given a vector field on a (pre)symlpectic manifold that preserves the (pre)symplectic structure, we construct a submanifold (namely, a torus) that is invariant with respect to the flow of the vector field. We use a recently developed method of proof that relies heavily on the geometry of the system, does not assume that the system is close to integrable, and does not rely on using action-angle variables. The proof has an a posteriori format, the invariant torus is constructed by using a Newton method in a space of functions, starting from a torus that is approximately invariant. This is a joint research with Sean Bauer. (Received July 17, 2017)