1125-37-3151 **Dong Chen*** (`dxc360@psu.edu`), Department of Mathematics, 109 McAllister Bldg, University Park, PA 16802. *Two types of KAM-nondegenerate nearly integrable systems with positive metric entropy.*

The celebrated KAM Theory says that if one makes a small perturbation of a non-degenerate completely integrable system, we still have a huge measure of invariant tori with quasi-periodic dynamics in the perturbed system. These invariant tori are known as KAM tori. What happens outside KAM tori draws lots of attention. In this talk I will present two types of C^∞ small Lagrangian perturbation of the geodesic flow on a flat torus. Both resulting flows have positive metric entropy. From this result we get positive metric entropy outside some KAM tori. What is special in the second type is that positive metric entropy comes from an arbitrarily small tubular neighborhood of one trajectory. This is a joint work with D. Burago and S. Ivanov. (Received September 21, 2016)