Yakov B. Pesin* (pesin@math.psu.edu), Department of Mathematics, Eberly College of Science, Penn State University, University Park, PA 16803. *Essential coexistence of completely hyperbolic and completely non-hyperbolic behavior.

I will describe an example of a $C^\infty$ volume preserving topologically transitive diffeomorphism of a compact smooth Riemannian manifold which is ergodic (indeed is Bernoulli) on an open and dense subset $U$ of not full measure and has zero Lyapunov exponent on the complement of $U$. This can be viewed as a version of a ”discrete” KAM theory phenomenon in the volume preserving category. (Received September 06, 2011)