1019-53-57   **Yuli B Rudyak*** (`rudyak@math.ufl.edu`), Department of Mathematics, University of Florida, 358 Little Hall, Gainesville, FL 32611-8105. *On symplectic analog of Lusternik–Schnirelmann theory.* Preliminary report.

This is a joint work with Felix Schlenk. We study the minimal number $S(M)$ of Darboux charts needed to cover a symplectic manifold $M = (M, \omega)$. There is an analog of the Lusternik–Schnirelmann theorem (pointed us by Eliashberg): This number estimates from below the number of critical points of an exhausting plurisubharmonic function on M. Hence, for M open the invariant $S(M)$ is important for the description of structure of such manifolds. On the other hand, for closed connected M (where every plurisubharmonic function is constant), the invariant $S(M)$ is closely related to symplectic topology of M. In particular, it enables us to distinguish different symplectic manifolds that are diffeomorphic. We effectively estimate this number from below and above in terms of the Lusternik–Schnirelmann category of M and the Gromov width of M. (Received August 03, 2006)