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Marlene Frigon* (frigon@dms.umontreal.ca), Dept. mathématiques et statistique, Université de Montréal, C.P. 6128, succ. Centre-ville, Montréal, Québec H3C 3J7, Canada. *On a notion of category depending on a functional and an application to a perturbed Hamiltonian system.* Preliminary report.

A notion of category depending on a functional is introduced. This notion permits to obtain a better lower bound on the number of critical points of a functional than the classical Lusternik-Schnirelman category. A relation between this notion and the linking of type splitting spheres is presented. An application to a perturbed Hamiltonian system is also stated. (Received August 25, 2008)