DIFFERENTIAL GEOMETRY/PDE SEMINAR

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Ljusternik-Schnirelman theorem for non-differentiable functionals in Orlicz-Sobolev space

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Ljusternik-Schnirelman theory is a generalization of the Courant minimax principle which characterizes the eigenvalues of compact and self-adjoint operators in a Hilbert space. The main result of L-S theory is the existence of infinitely many eigenvalues tending to infinity for some odd gradient operators in reflexive and separable Banach space. I shall consider functionals of calculus of variations with non-polynomial growth. The problem is that L-S theory is not directly applicable due to nonsmoothness of the functionals and nonreflexivity of the associated Orlicz-Sobolev space.