

Pavel Drábek

University of West Bohemia in Pilsen, Czech Republic

Some qualitative properties of quasilinear boundary value problems

In this lecture we demonstrate the fact that the famous Ljusternik–Schnirelmann characterization of some eigenvalues of nonlinear elliptic problems (by a minimax formula) has a global variational character. Indeed, we show that, for some homogeneous quasilinear elliptic eigenvalue problems, there are variational eigenvalues other than those of the Ljusternik–Schnirelmann type. In contrast, these eigenvalues have a local variational character. Such a phenomenon does not occur in typical linear elliptic eigenvalue problems, owing to the Courant–Fischer theorem which is the linear analogue and predecessor of the Ljusternik–Schnirelmann theory.