On the Eigenvalue problem involving the Robin p (x)-Lap1acian

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A nonlinear eigenvalue problem with Robin boundary conditions on a bounded domain is investigated. The existence of a sequence of non-negative eigenvalues is established using the Ljusternik-Shnirelmann principle. Using the variational principle, we also prove that there exists a principal eigenvalue which is the smallest of all the eigenvalues and that the set of eigenvalues is not closed.

Keywords: Eigenvalues; p(x)-Laplacian; Ljusternik-Shnirelmann principle; Variational principle.