

On periodic solutions of the quasilinear Euler-Bernoulli equation

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Abstract

The problems related to the problem of periodic solutions of the quasilinear Euler-Bernoulli equation with homogeneous boundary conditions on the segment are discussed. The asymptotic formulas of the corresponding Sturm-Liouville problem for eigenfunctions and eigenvalues, as well as the conditions for the invertibility of the differential operator of the equation, are obtained. For the quasilinear Euler-Bernoulli equation, the conditions of existence, uniqueness, non-existence, and countable solvability are obtained.