

Djebali, Smaïl; Kavian, Otared; Moussaoui, Toufik

Qualitative properties and existence of solutions for a generalized Fisher-like equation.

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Summary: This paper is devoted to the study of an eigenvalue second order differential equation, supplied with homogenous Dirichlet conditions and set on the real line. In the linear case, the equation arises in the study of a reaction-diffusion system involved in disease propagation throughout a given population. Under some relations upon the real parameters and coefficients, we present some existence and nonexistence results. We use a variational method and fixed point arguments.

MSC:

- [34B05](#) Linear boundary value problems for ordinary differential equations
- [34B40](#) Boundary value problems on infinite intervals for ordinary differential equations
- [34C20](#) Transformation and reduction of ordinary differential equations and systems, normal forms

Cited in **5** Documents

Keywords:

linear and sub-linear ODEs; variational method; fixed point theorems; compactness criterion

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