MULTIPLE POSITIVE SOLUTIONS FOR A NONLOCAL QUASILINEAR PROBLEM FROM POPULATION GENETICS

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Resumo/Abstract:
We consider a nonlocal quasilinear elliptic problem under a flux boundary condition motivated by a model in population genetics. The reaction term is of strong Allee effect type, which takes place if the growth rate per capita is negative when the population density is small. Such term has two spatial dependent zeros that we do not require to be continuous functions. Our aim is to construct two positive solutions for the problem when a parameter is large and to prove that no positive solution can exist for small values of such parameter. The results we present generalize some previous works and complete others in the literature. This work is part of first authors doctoral thesis at Universidade Federal de São Carlos under the supervision of the second author.

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