

Mimmo Iannelli

Dipartimento di Matematica, Università di Trento
iannelli@science.unitn.it

Numerical solution of the diffusive Lotka-McKendrick problem via parabolic regularization

We consider the linear Lotka-McKendrick model of an age-structured population diffusing in a habitat with no exchange of individuals with the outer environment. In order to develop a procedure for computing the solution to this problem we shall introduce an appropriate viscosity model by considering an approximating regularized parabolic problem and prove that the sequence of the approximating solutions tends to the solution to the original problem. The advantage of this approach is that numerical solution of the problem may be based on methods for parabolic and elliptic problems which are more stable than the hyperbolic-parabolic original problem.

This is a joint work with Gabriela Marinoschi from Accademia Romana, Bucarest.