

Finite Element Approach to Trap-Insect Model

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The trap-insect model considered in this presentation comprises a system of two advection-diffusion-reaction equations. We develop finite element approximation of the solution of the model in order to produce accurate numerical simulations using a non-uniform triangulation. The algorithm is used for computing estimates of the parameters of the insect population. Particular attention is paid to estimating the population size, including the case of spatially heterogeneous population distributions. Using traps is the common practice to gain knowledge on the presence of a particular insect population and its density. This work aims to contribute to optimizing field protocols for accurate parameters estimation.