Sensitivity Analysis of Trap-models for Insects[1]

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In order to control a wild insect population with SIT (Sterile Insect Technique), it is necessary to estimate this population. This can be done with experimental data (using traps), combined with appropriate dispersal models, like those studied in [1, 2]. However the observed trap data depend on some (unknown) population parameters, like the diffusivity, and some (unknown) trap parameters, like the attractive force. Therefore the value of the population density is to be identified jointly with the value of other parameters related to the insects and the traps. The possibility of robust identification of multiple parameters using interferences between the traps was demonstrated in [1]. In this talk we present a global sensitivity analysis of the model developed and studied in [1]. This analysis is carried using the extended Fourier amplitude analysis test (eFAST) [3].

References

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