

# Optimization techniques for the best exploitation of pests parasitization

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## Abstract

In agriculture pests play a very negative role. In this talk we consider an instance involving olive tree orchards and *Prays oleae* (Bernard) (Lepidoptera: Praydidae). A map of all the dynamical system's equilibria is determined, with transcritical bifurcations linking them. To these, system bifurcation parameters are associated that may induce the dynamics to settle to an adjacent system state leaving the current one upon crossing a critical threshold. In this way, repeating this step several times a desirable state may eventually be achieved traversing a few other equilibria. Acting on the bifurcation parameters however involves nonnegligible costs, because some work is required. Using dynamic programming techniques the best strategy to achieve the desired goal of the final configuration with the pest-free equilibrium can be determined.

## References

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