## 1014-92-1400

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Often plant invasions consist of a large (main) focus and several smaller satellites. In invasive plant management, control is often repeated annually and budgets are set for a finite period of time. Yet whether it is best to apply control to the main focus, the satellites or some combination is not clear. In this talk we construct a discrete time optimal control problem to determine where control is best applied over a finite time horizon. We form an objective functional for the cost associated with control and a damage cost due the invasive plant. We solve the optimal control problem for a variety of parameter sets. (Received September 28, 2005)