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Title: Optimal control of Influenza model

Abstract :
We study an optimal intervention strategies in response to influenza outbreaks. Variations of SEIAR model are considered to include seasonal forcing and age structure. Control strategies are composed of vaccination, prophylaxis with antiviral drugs, and social distancing such as school closures. We formulate an optimal control problem, attempting to minimizes incidence while being mindful of the costs of intervention. The effects of delays in vaccine product, seasonal forcing, and age-dependent transmission rate on optimal controls are investigated and advice for optimal strategies are suggested through numerical simulations.