

## OPTIMAL CONTROL OF NON-AUTONOMOUS SEIRS MODELS WITH VACCINATION AND TREATMENT

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**ABSTRACT.** We study an optimal control problem for a non-autonomous SEIRS model with incidence given by a general function of the infective, the susceptible and the total population, and with vaccination and treatment as control variables. We prove existence and uniqueness results for our problem and, for the case of mass-action incidence, we present some simulation results designed to compare an autonomous and corresponding periodic model, as well as the controlled versus uncontrolled models.

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