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AN ANATICALLY TREATABLE TOY MODEL USING OPTIMAL CONTROL THEORY IN CASE OF MOSQUITO CONTROL APPLIED TO VECTOR BORNE DISEASE PREVENTATION AND REDUCTION MANAGMENT

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Zika, dengue, chikungunya and yellow fever are examples of vector-borne diseases transmitted by day-time active mosquitoes. In tropical and sub-tropical regions of Asia and Latin America these diseases are a major health risk and a negative economic factor. Classical mosquito control measures, like bed-nets and municipal spraying in the streets, have proven to be of little eective in combating disease cases. A new generation of disease prevention is therefore required. Epidemiologists are encouraged to investigate new measures, like vaccination and mosquito repellence. In this paper, we study a toy-model based on Optimal Control Theory which mimics the vaccination and repellency factor in the linear infection model. Numerical analysis with linear and quadratic cost function will be also performed and compared.

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