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On an Optimal Control Problem Arising from the Tumor Treatment

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In this talk we will discuss a mathematical model which describes the tumor growth in animals. The mathematical model is governed by a nonlinear reaction-diffusion system. We first use some PDE techniques to establish the global existence and uniqueness as well as the long-time behavior of the solution for the system. We then turn the attention on the optimal drug dosage for the tumor treatment. It is shown that under certain conditions there exists an optimal drug dosage for the problem. The result could be potentially used in the medical science in designing the automation of drug usage for some diseases.