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A control approach for ODE cancer models

In this talk, we investigate cancer by using a control approach based on set-valued analysis and viability theory, given a class of ODE tumor dynamics. We show how adequate selection procedures can lead to feedback protocols with which cancer cells are eradicated. In contrast to the optimal control approach, our set-valued framework allows of highlighting the well known connection between the initial cancer stage and its curability, as well as the minimality and smoothness of a protocol and their impact on the patient quality of life. Examples from the literature are studied in order to illustrate the approach.

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