

Towards an Algorithmic Approach to Control of Dynamic Phenotypes

Konstantin Mischaikow *

Department of Mathematics,
Rutgers University, Piscataway, NJ

Abstract

We are developing an algorithmic, two-step approach for the control of dynamic phenotypes. The first step inputs an interaction network(s) and a control query and then outputs either potential strategies for the desired control or a statement that the desired control is not possible. Given a potential strategy, the second step takes an analytic model, e.g., a parameterized system of differential equations, and then outputs a validation or invalidation of the proposed strategy within the context of the particular analytic model. This talk will describe the meaning of a dynamic phenotype, the algorithmic steps, some preliminary results, and future work.

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