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Jin Wang* (jin-wang02@utc.edu). *Modeling and simulating tumor virotherapy.*

We present a mathematical modeling framework, where a free boundary problem is formulated based on a system of nonlinear PDEs, for the study of tumor growth under the treatment of virotherapy. We conduct extensive numerical simulation to examine tumor development under a wide range of biological settings, and discuss possible improvement on the efficacy of the treatment. We particularly emphasize the multiple interactions among tumor cells, oncolytic viruses, and immune systems that shape the complex pattern of tumor growth. (Received September 22, 2017)