Tumor growth model choice in the presence of limited data. CARSON HUEY-YOU, DYLAN BARTH, HANA JAAFARI, Texas Christian University, HOPE MURPHY, Utaca College, MIKE ELLIS, HANA DOBROVOLNY, Texas Christian University — Cancer is defined as a group of diseases involving abnormal cell growth or tumors with the potential to spread throughout the body. The tumors in reality are made up of a necrotic core of dead cells, and an outer layer of tumor cells, but these details are often ignored when modeling tumor growth with ordinary differential equation (ODE) models. Several different ODE models are currently used to model tumor growth, although there is no guidance on model choice for particular systems. I investigated seven candidate tumor growth models by fitting the models to over 200 different cancer growth data sets to find the best-fit for specific tumors. In this paper, we investigate whether the duration of the data set determines choice of growth model.

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Date submitted: 02 Oct 2015   Electronic form version 1.4