Fluctuation of Parameters in Tumor Cell Growth Model

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Abstract: We study the steady state properties of a logistic growth model in the presence of Gaussian white noise. Based on the corresponding Fokker-Planck equation the steady state solution of the probability distribution function and its extrema have been investigated. It is found that the fluctuation of the tumor birth rate reduces the population of the cells while the fluctuation of predation rate can prevent the population of tumor cells from going into extinction. Noise in the system can induce the phase transition.

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