

DETERMINISTIC CHAOS VS STOCHASTIC FLUCTUATION IN CANCER MODEL

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In this talk, we propose a $3D$ deterministic cancer model, governing by effector cell, tumor cell and healthy tissue cell(host cell). We perform local dynamics of equilibria as well as Hopf-bifurcation. The commencement of preserved oscillation generates chaotic phenomena which has been examined by 0-1 test. We also discuss the long-term behavior of the system by inducing multiplicative noise. Global solution and persistence of proposed model ensures the non-negativity and boundedness of deterministic system. The scenario of tumor extinction is captured from noisy environment during the oscillations in co-existence domain of deterministic system.

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