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AN EFFICIENT NUMERICAL SCHEME FOR CARCINOGENESIS MUTATIONS MODELS BASED ON REACTION-DIFFUSION EQUATIONS WITH TIME DELAY

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ABSTRACT

Reaction-diffusion equations play an important role while modeling some physical phenomena's, for example it can be used for displaying phenomena, such as pattern formation, turning structures, nonlinear waves and spatio-temporal chaos and many others.

In this talk, we will present an efficient numerical scheme for carcinogenesis mutations models which are based on the system of delay differential equations of Lotka-Volterra type with time delay and diffusion. The case of one and two-stage mutations is consider with an appropriate initial and zero-flux boundary conditions. Our scheme is based on spectral methods, which allow much accuracy then those of standard numerical scheme.

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