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ON A NEW NON-STANDARD FINITE-DIFFERENCE METHOD FOR SOLVING A MODEL OF CANCER INVASION

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ABSTRACT

We present a new non-standard method based on finite differences for solving a system of partial differential equations modelling the invasion of cancer cells through a healthy tissue. The novelty of the proposed discretization scheme consists in the way of approximation of the partial derivatives. The new approximation is very efficient and guarantees the required non-negativity of the solutions. The method is illustrated by numerical experiments.

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