Landscape-dependent computational domains for reaction-diffusion equations

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ABSTRACT

The landscape with obstacle is often found in predator-prey systems. In the case of periodic travelling wave solutions, the numerical solution of the reaction-diffusion system in the rectangular computational domain leads to a chaotic pattern and the boundary treatment is important. To solve this problem, we propose the landscaping fitted domain defined using a distance function based on obstacles. We apply the proposed algorithm to present good results of various mathematical experiments.

REFERENCES