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Numerical solution for the chemotaxis model by finite difference method

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Messikh, C.[a], Chowdhury, M.S.H.[b], Guesmia, A.[c], Mawa, S.[d], Okhunov, A.[b], Aznam, S.M.[b]

[a]Badji Mokhtar University, Faculty of Sciences, Department of Mathemathic, Annaba, 23000, Algeria
[b]Deptartment of Science in Engineering, Faculty of Engineering, International Islamic University Malaysia, Jalan Gombak, Kuala Lumpur, 53100, Malaysia
[c]University Skikda, Algeria.University of 20 August 1955, Faculty of Sciences, Department of Mathemathic, Skikda, 21000, Algeria

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Abstract

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The finite difference method for discretization space fractional chemotaxis model is introduced in this study. The space fractional chemotaxis system is obtained from the classical advection-diffusion equations of the chemotaxis system by replacing the spatial derivative with a generalized derivative of fractional order. We compare the numerical solution of finite difference method and exact solution for a test example. The results reveal that the finite difference method is very simple and efficient for solving space fractional chemotaxis system. © Published under licence by IOP Publishing Ltd.

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Chowdhury, M.S.H.; Deptartment of Science in Engineering, Faculty of Engineering, International Islamic University Malaysia, Jalan Gombak, Kuala Lumpur, Malaysia