In the name of Allah

Sakine Esmaili

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Education

MS in Applied Mathematics September 2008
Sharif University of Technology

Dissertation: Existence and Uniqueness of Solution for Two Free Boundary Problems Modelling Tumor Growth

Supervisor: Pro. Mahmoud Hesaaraki

PhD in Applied Mathematics September 2011
Tarbiat Modres University

Dissertation: Solving some operator equations by analytical and numerical methods and its applications in control of cancer tumors growth

Supervisor: Dr. Mohammad Reza Eslahchi

Work Experience

Postdoctoral Researcher in Tarbiat Modares University
November 2016-November 2018

Fields of Research

Studying and solving mathematical models including partial differential equations and stochastic partial differential equations numerically

Theory of Stochastic and deterministic partial differential equations

Deterministic and stochastic optimal control

Game theory

Deterministic and stochastic differential games

Data science

Publications

Sakine Esmaili, M.R. Eslahchi, A modified spectral method for solving operator equations**, Journal of Computational and Applied Mathematics** (2016)

Sakine Esmaili, M. R. Eslahchi, Application of collocation method for solving a parabolic-hyperbolic free boundary problem which models the growth of tumor with drug application, **Mathematical Methods in the Applied Sciences** (2017)

Sakine Esmaili, M. R. Eslahchi, Optimal control for a parabolic-hyperbolic free boundary problem modeling the growth of tumor with drug application**, Journal of Optimization Theory and Applications** (2017)

Sakine Esmaili, M. R. Eslahchi, Application of fixed point-collocation method for solving an optimal control problem of a parabolic-hyperbolic free boundary problem modeling the growth of tumor with drug application, **Computers & Mathematics with Applications.** (2018)

Sakine Esmaili, M. R. Eslahchi, Numerical solution of optimal control problem for a model of tumour growth with drug application, **International Journal of Control.** (2019)

Sakine Esmaili, F. Nasresfahani, M. R. Eslahchi, Solving a fractional parabolichyperbolic free boundary problem which models the growth of tumor with drug application using finite difference-spectral method, **Chaos, Solitons & Fractals**, (2020)

M. R. Eslahchi, Sakine Esmaili, The convergence and stability analysis of a numerical method for solving a mathematical model of language competition, **Applied Numerical Mathematics**, (2020)

Sakine Esmaili, M. R. Eslahchi, Optimal Control for a Nonlinear Stochastic Parabolic Model of Population Competition, **Optimization**, (2020)

M. R. Eslahchi, Sakine Esmaili, A Game-Theoretic Perspective to Study the Nonlinear Stochastic Parabolic Model of Population Competition, **Optimization**, revision.

Sakine Esmaili, M.R. Eslahchi, N. Namaki, A blending image denoising model based on second- and fourth-order partial differential equations, Mathematical Sciences, (2021)

Academic Honors

Top thesis in Tarbiat Modares University 2016

Bronze Medal in Iranian Mathematics competition for university students 2007

Bronze Medal in Iranian Mathematics competition for university students 2008

Skills

Fluent in spoken and written English

Experience of using Python and Maple

Extensive experience of using Matlab and Latex

Workshops

Frontiers of MD Simulation in Materials Science and Biophysics (IPM)

Big Data (Amirkabir University of Technology)

Theory and Network Science (Tarbiat Modares University)