

## Գրականություն

1. Бахвалов Н.С., Жидков Н.П., Кобельков Г.М., Численные методы, 8-е издание, ISBN 978-5-9963-2616-7, Москва, 2015
2. Олифер В.И., Дуальные числа в численном интегрировании, March 20, 2021
3. Пименов В.Г., Численные методы. Часть 1, ISBN 978-5-7996-1015-9, 2013
4. Гордеев В.Н., Кватернионы и бикватернионы с приложениями в геометрии и механике, ISBN 978-617-676-099-3, Киев, 2016
5. Самарский А.А., Введение в теорию разностных схем, Москва, 1971
6. Алексеев Г.В., Введение в численные методы решения дифференциальных уравнений, 2010
7. Годунов С.К., Рябенький В.С., Разностные схемы, Москва, 1977
8. Олейник О.А., Лекции об уравнениях с частными производными, 5-е издание, ISBN 978-5-9963-2835-2, Москва, 2015.
9. Ahmadi N., Mohammadi M.K., A hybrid differential transforms and finite difference method to numerical solution of convection-diffusion equation, Applied Mathematics and Computation, 417, 126748, 2022
10. Baydin A.G., Pearlmutter B.A., Radul A.A., Siskind J.M., Automatic Differentiation in Machine Learning: A Survey, arXiv, February 5, 2018
11. Cai S., Wang Z., Wang S., Perdikaris P., Karniadakis G.E., Physics-informed neural networks (PINNs) for heat transfer problems, Journal of Heat Transfer, 143(5), 050801, 2021
12. Hajrulla S., Uka A., Ali L., Demir T., Numerical methods and approximations for the heat transfer problem, Proceedings of the International Conference on Academic Research in Science, Technology and Engineering, 1(1), 21–31, 2023
13. He W., Li J., Kong X., Deng L., Multi-level physics-informed deep learning for solving partial differential equations in computational structural mechanics, Computer Methods in Applied Mechanics and Engineering, 396, 115220, 2023
14. Morton K.W., Mayers D.F., Numerical solution of partial differential equations: An introduction, 2nd edition, Cambridge University Press, 2005

15. Patankar S.V., Numerical heat transfer and fluid flow, Hemisphere Publishing Corporation, 1980
16. Raissi M., Perdikaris P., Karniadakis G.E., Physics-informed neural networks: A deep learning framework for solving forward and inverse problems involving nonlinear partial differential equations, *Journal of Computational Physics*, 378, 686–707, 2019
17. Sirakanyan S., “A comparative analysis of solving the thermal conduction equation using dual numbers and automatic differentiation,” Proceedings of the XIX International Scientific and Practical Conference “Development of science in the XXI century”, p. 1170, ISBN 978-92-44514-41-2, Dortmund, Germany, February 13–14, 2025
18. Sirakanyan S.S., Babayan A.H., “Comparative analysis of the numerical solution of the diffusion equation in plants using automatic differentiation and grid methods,” *Bradleya*, Vol. 43, Issue 8, Part 1, pp. 17–23, ISSN 0265-086X, August 2025