

Aleksandr O. Vasilev

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Personal

Born on April 26, 1987

Russian Federation Citizen

English: Pre-Intermediate

Skills

Programming languages: C/C ++, Python

Libraries: MPI (Parallelization), FEniCS (FEM), PETSc, SLEPc (Algebra), VTK (Visualisation)

Applications: NETGEN (Mesh generation), GMSH (Mesh generation), Paraview (Visualisation)

Operating systems: Ubuntu (Linux), Mac OS, Windows OS

Education

M.Sc. in applied mathematics, North-Eastern Federal University, 2011.

Ph.D. in applied mathematics, North-Eastern Federal University, 2018.

Subject: Numerical modeling of neutron diffusion dynamics in a nuclear reactor.

Employment

Programmer, ITERA LLC, Yakutsk, 2011-2011

Specialist Expert, Pension Fund of the Russian Federation, Yakutsk, 2011-2012

Associate Researcher, North-Eastern Federal University, Yakutsk, 2012-2014

Lead Engineer, North-Eastern Federal University, Yakutsk, 2014-2016

Engineer programmer, Nuclear Safety Institute of the RAS, Moscow, 2015-present

Senior Researcher, North-Eastern Federal University, Yakutsk, 2017-present

Research interests

Numerical methods

Multiphysics problems

Spectral problems

Reduction methods

Parallel algorithms

Applied modeling

Neutron diffusion in a nuclear reactor

Medicine problems

Publications*Books*

1. N.M. Afanasyeva, M.Yu. Antonov, V.S. Borisov, A.V. Grigoriev, A.E. Kolesov, P.A. Popov, I.K. Sirditov, A.O. Vasilev, M.V. Vasilieva, P.E. Zakharov edited by P.N. Vabishchevich. Computational Technologies. Advanced Topics. Moscow: LENAND, 2017.

Selected articles

1. Avvakumov A. V., Strizhov V. F., Vabishchevich P. N., Vasilev A.O. State change modal method for numerical simulation of dynamic processes in a nuclear reactor // Progress in Nuclear Energy. – 2018. – Vol. 108. – P. 240-261.
2. Vabishchevich P.N., Vasil'ev A.O. Time step selection for the numerical solution of boundary value problems for parabolic equations // Computational Mathematics and Mathematical Physics. – 2017. – Vol. 57. – P. 843-853.
3. Avvakumov A. V., Strizhov V. F., Vabishchevich P. N., Vasilev A.O. Spectral properties of dynamic processes in a nuclear reactor // Annals of Nuclear Energy. – 2017. – Vol. 99. – P. 68-79.
4. Avvakumov A.V., Vabishchevich P.N., Vasil'ev A.O., Strizhev V.F. Numerical modeling of neutron diffusion non-stationary problems // Matematicheskoe Modelirovanie. – 2017. – Vol. 29 (7). – P. 44-62.
5. Avvakumov A. V., Strizhov V. F., Vabishchevich P. N., Vasilev A.O. Solution of the 3D Neutron Diffusion Benchmark by FEM // International Conference on Large-Scale Scientific Computing. – Springer, Cham, 2017. – P. 435-442.
6. M. Yu. Antonov, A.V. Popinako, G.A. Prokopiev, A.O. Vasilyev. Numerical Modelling of Ion Transport in 5-HT₃ Serotonin Receptor using molecular dynamics // International Conference on Numerical Analysis and Its Applications, Springer. – 2016. – Vol. 10187. – P. 195-202.
7. Vasilyev A., M. Yu. Antonov, Popinako A. et al. MD simulation of dynamics and transport in 5-HT₃ receptor // The Febs Journal. 2015. – Vol. 282. – P. 402-402.