List of publications

Pavel Eichler

Publications - Impacted papers (WoS & Scopus)

[1] Fučík, R., **Eichler, P.**, Straka, R., Pauš, P., Klinkovský, J., Oberhuber, T. (2019). On optimal node spacing for immersed boundary–lattice Boltzmann method in 2D and 3D. Computers and Mathematics with Applications, 77(4), 1144-1162. ISSN 0898-1221. DOI: https://doi.org/10.1016/j.camwa.2018.10.045

[2] **Eichler, P.**, Fučík, R., Straka, R. (2021). Computational study of immersed boundary – lattice Boltzmann method for fluid-structure interaction. Discrete and Continuous Dynamical Systems-S, 14(3), 819-833. ISSN 1937-1632. DOI: https://doi.org/10.3934/dcdss.2020349

[3] Beneš, M., **Eichler, P.**, Klinkovský, J., Kolář, M., Solovský, J., Strachota, P., Žák, A. (2021). Numerical simulation of fluidization for application in oxyfuel combustion. Discrete and Continuous Dynamical Systems-S, 14(3), 769-783. ISSN 1937-1632. DOI: https://doi.org/10.3934/dcdss.2020232

[4] Fučík, R., Galabov, R., Pauš, P., **Eichler, P.**, Klinkovský, J., Tintěra, J., Chabiniok, R. (2020). Investigation of phase-contrast magnetic resonance imaging underestimation of turbulent flow through the aortic valve phantom: Experimental and computational study using lattice Boltzmann method. Magnetic Resonance Materials in Physics, Biology and Medicine, 33(5), 649-662. DOI: https://doi.org/10.1007/s10334-020-00837-5

[5] **Eichler, P.**, Fuka, V. Fučík, R. (2021). Cumulant lattice Boltzmann simulations of turbulent flow above rough surfaces. Computers and Mathematics with Applications, 92, 37-47. ISSN 0898-1221. DOI: https://doi.org/10.1016/j.camwa.2021.03.016

[6] Beneš, M., **Eichler, P.**, Fučík, R., Hrdlička, J., Klinkovský, J., Kolář, M., Smejkal, T., Skopec, P., Solovský, J., Strachota, P., Straka, R., Žák, A. (2022). Experimental and numerical investigation of air flow through the distributor plate in a laboratory-scale model of a bubbling fluidized bed boiler. Japan Journal of Industrial and Applied Mathematics, 39(3), 943-958. ISSN 0916-7005. DOI: https://doi.org/10.1007/s13160-022-00518-x

[7] Fučík, R., **Eichler, P.**, Klinkovský, J., Straka, R., Oberhuber, T. (2022). Lattice Boltzmann Method Analysis Tool (LBMAT). Numerical Algorithms, 1-17. DOI: https://doi.org/10.1007/s11075-022-01476-8

[8] Beneš, M., **Eichler, P.**, Hrdlička, J., Klinkovský, J., Kolář, M., Smejkal, T., Skopec, P., Solovský, J., Strachota, P., Žák, A. (2022). Experimental Validation of Multiphase Particle-in-Cell Simulations of Fluidization in a Bubbling Fluidized Bed Combustor. Powder Technology, 416, 118204. DOI: https://doi.org/10.1016/j.powtec.2022.118204

[9] **Eichler, P.**, Galabov, R., Fučík, R., Škardová, K., Oberhuber, T., Pauš, P., Tintěra, J., Chabiniok, R. (2023). Non-Newtonian turbulent flow through aortic phantom: Experimental and computational study using magnetic resonance imaging and lattice Boltzmann method. Computers and Mathematics with Applications, 136, 80-94. ISSN 0898-1221. DOI: https://doi.org/10.1016/j.camwa.2023.01.031

[10] **Eichler, P.**, Fučík, R., Strachota, P. (2024). Investigation of mesoscopic boundary conditions for lattice Boltzmann method in laminar flow problems. Computers and Mathematics with Applications, 173, 87-101. ISSN 0898-1221. DOI: https://doi.org/10.1016/j.camwa.2024.08.009.

[11] Szajding, A., Gołdasz, A., Łach, Ł., **Eichler, P.** (2024). The Impact of Tube Arrangement in Latent Heat Thermal Energy Storage on the Melting Rate of Phase Change Material. Advances in Science and Technology Research Journal, 18(8), 366-374. ISSN 2080-4075. DOI: https://doi.org/10.12913/22998624/194888.

Contribution in proceedings

[1] **Eichler, P.**, Fučík, R. Numerical Analysis of Immersed Boundary Lattice Boltzmann Method for Fluid-Structure Interaction. Doktorandské dny 2018, eds: Ambrož P., Masáková Z., pp. 23-24.

[2] **Eichler, P.**, Fučík, R. Boundary layer flow simulations using lattice Boltzmann method. Doktorandské dny 2019, eds: Ambrož P., Masáková Z., pp. 19-28.

[3] **Eichler, P.**, Cumulant lattice Boltzmann simulations of turbulent flow above rough surfaces. Doktorandské dny 2020, eds: Ambrož P., Masáková Z., pp. 11-22.

[4] **Eichler, P.**, Malík, M., Oberhuber, T., Fučík, R. Numerical investigation of the discrete solution of phase-field equation. ALGORITMY 2020, 21st Conference on Scientific Computing. Vysoké Tatry, Podbanské, Slovakia, September 10-15, 2020. Proceedings of contributed papers. Bratislava: VYDAVATEĽSTVO SPEKTRUM STU, 2020. p. 111-120. ISBN 978-80-227-5032-5.

[5] Škardová, K., **Eichler, P.**, Oberhuber, T., Fučík, R. Investigation of Blood-Like Non-Newtonian Fluid Flow in Stenotic Arteries using the Lattice Boltzmann Method in 2D. ALGORITMY 2020, 21st Conference on Scientific Computing. Vysoké Tatry, Podbanské, Slovakia, September 10-15, 2020. Proceedings of contributed papers. Bratislava: VYDAVATEĽSTVO SPEKTRUM STU, 2020. p. 91-100. ISBN 978-80-227-5032-5.

[6] Beneš, M., **Eichler, P.**, Klinkovský, J., Kolář, M., Smejkal, T., Solovský, J., Strachota, P., Žák, A. Hrdlička, J., Skopec, P. CFD Simulation and Experimental Analysis of Fluidization in a Model of an Oxyfuel Fluidized Bed Boiler. ALGORITMY 2020, 21st Conference on Scientific Computing. Vysoké Tatry, Podbanské, Slovakia, September 10-15, 2020. Proceedings of contributed papers. Bratislava: VYDAVATEĽSTVO SPEKTRUM STU, 2020. p. 101-110. ISBN 978-80-227-5032-5.

[7] **Eichler, P.**, Fluid Flow Simulations through Distributor Plate Using Cumulant Lattice Boltzmann Method. Doktorandské dny 2021, eds: Ambrož P., Masáková Z., pp. 23-24.

[8] Beneš, M., **Eichler, P.**, Klinkovský, J., Kolář, M., Solovský, J., Strachota, P., Žák, A. Modeling and Simulation of Bed Dynamics in Oxyfuel Fluidized Bed Boilers. Numerical Mathematics and Advanced Applications ENUMATH 2019. Cham: Springer International Publishing AG, 2021. p. 919-927. Lecture Notes in Computational Science and Engineering. vol. 139. ISSN 1439-7358. ISBN 978-3-030-55873-4.

[9] **Eichler, P.**, Non-Newtonian Turbulent Fluid Flow Simulations through Aortic Phantom Using Cumulant Lattice Boltzmann Method. Doktorandské dny 2022, eds: Ambrož P., Masáková Z., pp. 19-20.

Book chapters

[1] Chabiniok, R., Škardová, K., Galabov, R., **Eichler, P.**, Gusseva, M., Janoušek, J., Fučík, R., Tintěra, J., Oberhuber, T., Hussain, T. Translational Cardiovascular Modeling: Tetralogy of Fallot and Modeling of Diseases. In: Modeling Biomaterials. Birkhäuser, Cham, 2021. p. 241-276. DOI: https://doi.org/10.1007/978-3-030-88084-2_6