

List of publications

Pavel Eichler

Publications - Impacted papers (WoS)

Related to Doctoral Thesis

- [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* (5 year IF 3.693), 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* (5 year IF 1.622), 14(3), 819-833. ISSN 1937-1632. DOI: <https://doi.org/10.3934/dcdss.2020349>
- [3] Fučík, R., Galabov, R., Pauš, P., **Eichler, P.**, Klinkovský, J., Tintěra, J., Chabiniok, R. (2020). Investigation of phase-contrast magnetic resonance 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* (5 year IF 2.671), 33(5), 649-662. DOI: <https://doi.org/10.1007/s10334-020-00837-5>
- [4] **Eichler, P.**, Fuka, V. Fučík, R. (2021). Cumulant lattice Boltzmann simulations of turbulent flow above rough surfaces. *Computers and Mathematics with Applications* (5 year IF 3.693), 92, 37-47. ISSN 0898-1221. DOI: <https://doi.org/10.1016/j.camwa.2021.03.016>
- [5] 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* (5 year IF 0.681), 39(3), 943-958. ISSN 0916-7005. DOI: <https://doi.org/10.1007/s13160-022-00518-x>
- [6] Fučík, R., **Eichler, P.**, Klinkovský, J., Straka, R., Oberhuber, T. (2022). Lattice Boltzmann Method Analysis Tool (LBMAT). *Numerical Algorithms* (5 year IF 2.502), 1-17. DOI: <https://doi.org/10.1007/s11075-022-01476-8>
- [7] **Eichler, P.**, Galabov, R., Fučík, R., Škardová, K., Oberhuber, T., Pauš, P., Tintěra, J., Chabiniok, R. Non-Newtonian turbulent flow through aortic phantom: Experimental and computational study using magnetic resonance imaging and lattice Boltzmann method. After first revision in *Computers and Mathematics with Applications* (5 year IF 3.693).
- [8] **Eichler, P.**, Fučík, R., Strachota, P. Investigation of mesoscopic boundary conditions for lattice Boltzmann method in laminar flow problems. Under review in *Computers and Mathematics with Applications* (5 year IF 3.693).

Others

- [1] 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* (5 year IF 1.622), 14(3), 769-783. ISSN 1937-1632. DOI: <https://doi.org/10.3934/dcdss.2020232>
- [2] 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* (5 year IF 5.165), 416, 118204. DOI: <https://doi.org/10.1016/j.powtec.2022.118204>

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