

List of Publications

Ing. Jakub Klinkovský

1 Publications related to the dissertation

1.1 Publications with major contribution from the applicant

- [1] **Jakub Klinkovský**, Andrew C. Trautz, Radek Fučík, Tissa H. Illangasekare, *Lattice Boltzmann method-based efficient GPU simulator for vapor transport in the boundary layer over a moist soil: Development and experimental validation*. Computers & Mathematics with Applications. 2023, 138, 65-87. DOI: 10.1016/j.camwa.2023.02.021
- [2] **Jakub Klinkovský**, Tomáš Oberhuber, Radek Fučík, Vítězslav Žabka, *Configurable open-source data structure for distributed conforming unstructured homogeneous meshes with GPU support*. ACM Transactions on Mathematical Software. 2022, 48(3), 1-33. ISSN 0098-3500. DOI: 10.1145/3536164.
- [3] Tomáš Oberhuber, **Jakub Klinkovský**, Radek Fučík, *TNL: Numerical library for modern parallel architectures*. Acta Polytechnica. 2021, 61(SI), 122-134. ISSN 1805-2363. DOI: 10.14311/AP.2021.61.0122.
- [4] Radek Fučík, **Jakub Klinkovský**, Jakub Solovský, Tomáš Oberhuber, Jiří Mikyška, *Multidimensional mixed-hybrid finite element method for compositional two-phase flow in heterogeneous porous media and its parallel implementation on GPU*. Computer Physics Communications. 2019, 238 165-180. DOI: 10.1016/j.cpc.2018.12.004.

1.2 Publications with secondary contribution from the applicant

- [1] Radek Fučík, Pavel Eichler, **Jakub Klinkovský**, Robert Straka, Tomáš Oberhuber, *Lattice Boltzmann Method Analysis Tool (LBMAT)*. Numerical Algorithms. 2022. ISSN 1572-9265. DOI: 10.1007/s11075-022-01476-8.
- [2] Michal Beneš, Pavel Eichler, Radek Fučík, Jan Hrdlička, **Jakub Klinkovský**, Miroslav Kolář, Tomáš Smejkal, Pavel Skopec, Jakub Solovský, Pavel Strachota, Robert Straka, Alexandr Žák, *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. 2022. DOI: 10.1007/s13160-022-00518-x.
- [3] Radek Fučík, Radek Galabov, Petr Pauš, Pavel Eichler, **Jakub Klinkovský**, Jaroslav Tintěra, Radomír Chabiniok, *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. 2020, 33 649-662. DOI: 10.1007/s10334-020-00837-5.
- [4] Radek Fučík, Pavel Eichler, Robert Straka, Petr Pauš, **Jakub Klinkovský**, Tomáš Oberhuber, *On optimal node spacing for immersed boundary-lattice Boltzmann method in 2D and 3D*. Computers & Mathematics with Applications. 2019, 77(4), 1144-1162. DOI: 10.1016/j.camwa.2018.10.045.

2 Other publications

- [1] Michal Beneš, Pavel Eichler, Jan Hrdlička, **Jakub Klinkovský**, Miroslav Kolář, Tomáš Smejkal, Pavel Skopec, Jakub Solovský, Pavel Strachota, Alexandr Žák, *Experimental validation of multiphase particle-in-cell simulations of fluidization in a bubbling fluidized bed combustor*. Powder Technology. 2023, 416, 118204. ISSN 0032-5910. DOI: 10.1016/j.powtec.2022.118204.

- [2] Michal Beneš, Pavel Eichler, **Jakub Klinkovský**, Miroslav Kolář, Jakub Solovský, Pavel Strachota, Alexandr Žák, *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. DOI: 10.1007/978-3-030-55874-1_91.
- [3] Michal Beneš, Pavel Eichler, **Jakub Klinkovský**, Miroslav Kolář, Jakub Solovský, Pavel Strachota, Alexandr Žák, *Numerical simulation of fluidization for application in oxyfuel combustion*, Discrete and Continuous Dynamical Systems Series – S. 2021, 14(3), 769-783. DOI: 10.3934/dcdss.2020232.
- [4] Michal Beneš, Pavel Eichler, **Jakub Klinkovský**, Miroslav Kolář, Tomáš Smejkal, Jakub Solovský, Pavel Strachota, Alexandr Žák, Jan Hrdlička, Pavel Skopec, *CFD Simulation and Experimental Analysis of Fluidization in a Model of an Oxyfuel Fluidized Bed Boiler*. Proceedings of the Conference Algoritmy 2020, Editors: P. Frolkovič, K. Mikula and D. Ševčovič. SPEKTRUM, Slovak University of Technology in Bratislava, 2020, pp. 101-110. ISBN 978-80-227-5032-5. <http://www.iam.fmph.uniba.sk/amuc/ojs/index.php/algoritmy/article/view/1559>