

List of publications

Ing. Jakub Solovský

1 Publications related to the dissertation thesis

1.1 Impacted papers: leading author

- **Solovský, J.**, Fučík, R., Plampin, M.R., Illangasekare, T.H., Mikyška, J., 2020. Dimensional effects of inter-phase mass transfer on attenuation of structurally trapped gaseous carbon dioxide in shallow aquifers. *Journal of Computational Physics* 405, 109178. doi:10.1016/j.jcp.2019.109178.
- **Solovský, J.**, Fučík, R., Šístek, J., 2022. BDDC for MHFEM discretization of unsteady two-phase flow in porous media. *Computer Physics Communications* 271, 108199. doi:10.1016/j.cpc.2021.108199.

1.2 Impacted papers: co-author

- Fučík, R., Klinkovský, J., **Solovský, J.**, Oberhuber, T., Mikyška, J., 2019. Multidimensional mixed-hybrid finite element method for compositional two-phase flow in heterogeneous porous media and its parallel implementation on GPU. *Computer Physics Communications* 238, 165–180. doi:10.1016/j.cpc.2018.12.004.
- Askar, A.H., Illangasekare, T.H., Trautz, A., **Solovský, J.**, Zhang, Y., Fučík, R., 2021. Exploring the Impacts of Source Condition Uncertainties on Far-Field Brine Leakage Plume Predictions in Geologic Storage of CO₂: Integrating Intermediate-Scale Laboratory Testing With Numerical Modeling. *Water Resources Research* 57, e2021WR029679. doi:10.1029/2021WR029679.

1.3 Other publications (Scopus)

- **Solovský, J.**, Fučík, R., 2017. A Parallel Mixed-Hybrid Finite Element Method for Two Phase Flow Problems in Porous Media Using MPI. *Computer Methods in Materials Science* 17, 84–93.
- **Solovský, J.**, Fučík, R., 2019. Mass Lumping for MHFEM in Two Phase Flow Problems in Porous Media, in: Radu, F.A., Kumar, K., Berre, I., Nordbotten, J.M., Pop, I.S. (Eds.), *Numerical Mathematics and Advanced Applications ENUMATH 2017*, Springer International Publishing. pp. 635–643. doi:10.1007/978-3-319-96415-7_58.
- Fučík, R., **Solovský, J.**, Plampin, M.R., Wu, H., Mikyška, J., Illangasekare, T.H., 2020. Computational Methodology to Analyze the Effect of Mass Transfer Rate on Attenuation of Leaked Carbon Dioxide in Shallow Aquifers. *Acta Polytechnica*. doi:10.14311/AP.2021.61.0077.

2 Other publications

2.1 Impacted publications: co-author

- Beneš, M., Fučík, R., Havlena, V., Klement, V., Kolář, M., Polívka, O., **Solovský, J.**, Strachota, P., 2018. An efficient and robust numerical solution of the full-order multiscale model of lithium-ion battery. *Mathematical Problems in Engineering* 2018. doi:10.1155/2018/3530975.

- 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, 769–783. doi:10.3934/dcdss.2020232.
- 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* , 1–16. doi:10.1007/s13160-022-00518-x.

2.2 Other publications

- Beneš, M., Eichler, P., Klinkovský, J., Kolář, M., Smejkal, T., **Solovský, J.**, Strachota, P., Žák, A., Hrdlička, J., Skopec, P., 2020. CFD Simulation and Experimental Analysis of Fluidization in a Model of an Oxyfuel Fluidized Bed Boiler, in: *Proceedings of the Conference Algoritmy*, pp. 101–110.
- Beneš, M., Eichler, P., Klinkovský, J., Kolář, M., **Solovský, J.**, Strachota, P., Žák, A., 2021. Modeling and simulation of bed dynamics in oxyfuel fluidized bed boilers, in: *Numerical Mathematics and Advanced Applications ENUMATH 2019*. Springer, pp. 919–927. doi:10.1007/978-3-030-55874-1_91.