

## List of projects

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### Submitted projects:

*Saddle-point problems with bilinear Lagrangian and convex constraints: analysis, numerical solution and applications.* Czech Science Foundation (panel on mathematics and computer sciences), grant No. 22-29241S, 2022-2024. Inst. Geonics; my role: applicant.

*Computational methods for characterization of zones influenced by excavation.* Czech Science Foundation (panel on civil engineering), grant No. 22-12408S, 2022-2024. TU Liberec + Inst. Geonics + VSB-TU Ostrava; my role: co-applicant.

### Projects in solution:

*Efficient and reliable computational techniques for limit analysis and incremental methods in geotechnical stability.* Czech Science Foundation (panel on civil engineering), grant No. 19-11441S, 2019-2021. Inst. Geonics and Czech Technical University in Prague; my role: project leader.

*European Joint Programme on Radioactive Waste Management – EURAD.* The European Union's Horizon 2020 research and innovation programme, no. 847593, 2019-2024. Inst. Geonics is a third party supported by the Czech Radioactive Waste Repository (SÚRAO). My role: coordination of the Inst. Geonics team since 2021, responsibility for nonlinear mechanics.

*Prediction of EDZ properties with impact on safety and reliability of deep radioactive waste repository – ENDORSE.* Technology Agency of the Czech Republic (TA ČR), grant No. TK02010118, 2019-2022. Inst. Geonics is a project partner. My role: coordination of the Inst. Geonics team since 2021, responsibility for nonlinear mechanics.

### Terminated projects:

*IT4Innovations excellence in science.* The Ministry of Education, Youth and Sports (of the Czech Republic), National Programme of Sustainability (NPU II), project No LQ1602, 2016-2020. Inst. Geonics is a project partner; my role: deputy head of research programme *Numerical Method for Engineering*, coordinator of a task focused on numerical methods in nonlinear mechanics.

*IT4Innovations Centre of Excellence.* OP VaVpl project reg. no. CZ.1.05/1.1.00/02.0070, [www.it4i.cz](http://www.it4i.cz), 2011-2015. Inst. Geonics is a project partner solving research programme *Numerical Modelling for Solution of Engineering problems*; my role: deputy head of the Inst. Geonics team.

*DEvelopment of COupled models and their VALidation against EXperiments - DECOVALEX 2011, DECOVALEX 2015, DECOVALEX 2019, [www.decovallex.org](http://www.decovallex.org), strongly international project supported by the national agency responsible for a safe deposition of nuclear waste in the CR - the Czech Radioactive Waste Authority (SÚRAO). Last phase Decovalex 2019 was coordinated from the*

Lawrence Berkeley National Lab with the research teams from USA, UK, Switzerland, France, Germany, Sweden, Japan, Korea and Taiwan.

*CT and computational micromechanics of rocks.* The scholarship in a program of the Chinese Academy of Sciences for research and visiting scholars (Grant No. 2016001) of the State Key Laboratory of Geomechanics and Geotechnical Engineering, Institute of Rock and Soil Mechanics, Chinese Academy of Sciences, Wuhan, China, 2017-2019.

*Computational modeling of damage and transport processes in quasi-brittle materials.* Czech Science Foundation (GA ČR), grant No. 13-18652S, 2013-2015. Inst. Geonics was a project partner.

*Creating a multidisciplinary R&D team for reliable solution of mechanics tasks – SPOMECH.* OP VK project reg. no. CZ.1.07/2.3.00/20.0070, <http://spomech.vsb.cz>, 2011 – 2014. Inst. Geonics was a project partner.