

Pedagogical activities

Teaching and courses

- Mathematical Seminar III VŠB-TU Ostrava, winter semesters in 2017, 2018, 2019, 2020. The course for students of MSc. study programme Computational Mathematics is focused on an introduction to the mathematical theory of elasticity and elasto-plasticity.
- S. Sysala: *Linear elasticity problem: analysis and solution*. Textbook for VSB-Technical University of Ostrava, 2020, 37 pages.

Program codes in MATLAB

- M. Čermák, S. Sysala, J. Valdman. *Matlab FEM package for elastoplasticity*, 2018.
- <u>https://github.com/sysala/Matlab_nonlinear_elasticity_3D_FEM_quasi-Newton_DCG</u>, 2023.

Supervising of students

- **T. Luber**, VŠB-TU Ostrava, Ph.D. thesis, defended in 2022.
- J. Cenek, VŠB-TU Ostrava, 2018-2020, master thesis, defended in 2020.
- J. Kmec, Palacký University, Olomouc, 2013-2014, master thesis, defended in 2014.
- **M. Čermák**, VŠB-TU Ostrava, Ph.D. thesis, supervisor-specialist, defended in 2012.

Invited lectures

- Saddle-point problem with bilinear Lagrangian and convex constraints: analysis, numerical solution, applications, Nečas Seminar, Charles University, Prague, 6.12.2021
- A rigorous variant of the shear strength reduction method and its usage in geotechnical stability analysis, seminar series Current Problems in Numerical Analysis, Institute of Mathematics of the Czech Academy of Sciences, Prague, 17.9.2021.
- *Computable majorants of the limit load in perfect plasticity*. Nečas Seminar, Charles University, Prague, 19.3.2018.
- Limit load for variational problems with linear growth and its importance in perfect plasticity. Seminar on Numerical Analysis, Institute of Geonics, Ostrava, January 23, 2015.
- *Nonsmooth Newton method in optimization problems*. Seminar on Applied Mathematics, FEI VŠB-TU Ostrava, November 5, 2013.



- Properties and simplifications of constitutive time discretized elastoplastic operators. Seminar on PDEs, Institute of Mathematics of the Czech Academy of Sciences, Prague, May 15, 2012.
- Preliminary modelling of rock pillar failure processes based on continuum mechanics. Nečas Seminar, Charles University, Prague, May 14, 2012.