

Short curriculum vitae

Born in Frýdek-Místek, Czech Republic

Academic qualification

2008 **Ph.D.** degree in Applied Mathematics, Palacký University Olomouc

2003 Master degree (**Mgr.**) in Applied Mathematics, University of Ostrava

Work experience

2006 - now Department of Applied Mathematics and Computational Sciences, Institute of Geonics of the Czech Academy of Sciences, Ostrava (2006-2008 Ph.D. student, 2008-2011 postdoc, 2011-2021 researcher, deputy head, 2021-now senior researcher, head of department)

Fellowship

2001-2002 University of Liverpool (UK), ERASMUS Programme

Professional interests

- **Mathematical and numerical analysis** - o solvability and stability analysis in nonlinear mechanics; finite element method; a priori and a posteriori error analysis; duality and saddle-point problems.
- **Numerical methods for non-linear and optimization problems** - non-smooth variants of the Newton method; penalization and continuation techniques; conic optimization; convergence analysis; mesh adaptivity.
- **Elastoplasticity** - analysis and solution schemes for implicit constitutive operators and their derivatives; semismoothness of the operators, incremental methods, limit load analysis, shear strength reduction method.
- **Development of MATLAB codes and libraries** - in elastoplasticity, damage mechanics, porous flow and other problems.
- **Geotechnical applications** - stability of slopes, foundations or tunnels; excavation damage zones; nuclear waste repositories; numerical simulations with rock, soil and composite materials.