

Curriculum Vitae

November 27, 2018

Name (last, first): **Pařík, Petr**
Affiliation: Laboratory of Computational Solid Mechanics
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Research Topics

- Computational mechanics
- Finite element method
- Numerical methods and solvers for large problems
- Parallel and distributed computing

Education

2003 – 2010 Czech Technical University in Prague, Prague, Czechia
Ph.D. in Mechanics of Solids, Deformable Bodies and Continua

1997 – 2003 Czech Technical University in Prague, Prague, Czechia
M.Sc. in Applied Mechanics

Experience

2018/08 – 2018/11 Kyung Hee University, Yongin, Korea
Researcher, College of Engineering

2010/10 – present Czech Academy of Sciences, Prague, Czechia
Research associate, Institute of Thermomechanics

2005/09 – 2005/12 Northwestern University, Evanston, IL, USA
Research assistant, McCormick School of Engineering

2003/02 – 2010/09 Czech Academy of Sciences, Prague, Czechia
Research assistant, Institute of Thermomechanics

2003/02 – 2005/06 Czech Technical University in Prague, Prague, Czechia
Teaching assistant, Faculty of Mechanical Engineering

Publications

- Pařík P., Plešek J. Sparse direct solver for large finite element problems based on the minimum degree algorithm. *Advances in Engineering Software* 113:2–6, 2017. ISSN 0965-9978.

- Kolman R., Plešek J., Červ J., Okrouhlík M., Pařík P. Temporal-spatial dispersion and stability analysis of finite element method in explicit elastodynamics. *International Journal for Numerical Methods in Engineering* 106(2):113–128, 2016. ISSN 1097-0207.
- Pařík P. *An out-of-core sparse direct solver for very large finite element problems*. Doctoral thesis. CTU Reports 15(1), 2011. ISBN 978-80-01-04882-5.
- Pařík P., Plešek J. Assessments of the implementation of minimum degree ordering algorithms. *Pollack Periodica* 4(3):121–128, 2009. ISSN 1788-1994.

Invited talks and lectures

- Invited talk: *Efficient direct solver for large finite element problems*, Institute of Computer Science, Czech Academy of Sciences, 2015/05/19.
- Invited talk: *Efficient direct solver for large finite element problems*, Institute of Mathematics, Czech Academy of Sciences, 2016/02/26.
- Invited lecture: *On the implementation of a direct solution in the context of Finite Element Method*, Department of Mechanical Engineering, Kyung Hee University, 2018/10/29 & 2018/10/31.

Software

- Lead developer of PMD, since 2011
 - Package for Machine Design (PMD) is a multi-purpose computational Czech software for finite element analysis in solid mechanics with more than 40 years of tradition
 - Czech website: www.pmd-fem.com
 - English website: www.vamet.cz/en/programs-PMD-and-GFEM.html
- Author of the parallel sparse direct solver for PMD
 - implementation for modal synthesis problems (HMODA), 2018
 - implementation for steady-state and transient heat transfer problems (XT3TA), 2014
 - implementation for nonlinear static problems (HPLSA), 2013
 - implementation for eigenproblems (HEIGA), 2012
 - implementation for linear elastostatic problems (FEFSA), 2010

Activities and Memberships

- Member, Czech Society for Mechanics, since 2015
- Co-organizer (with Dr. Kolman, Dr. Linkeová and Prof. Okrouhlík), conference Splines and Isogeometric Analysis (SIGA), Prague, Czechia, 2012
- Co-organizer (with Dr. Kolman, Dr. Linkeová and Prof. Okrouhlík), conference Splines and Isogeometric Analysis (SIGA), Prague, Czechia, 2011