

# Curriculum Vitae

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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., Kim J.G., Isoz M., Ahn C.U. A parallel approach of the enhanced Craig–Bampton method. *Mathematics* 9(24):3278, 2021. <https://doi.org/10.3390/math9243278>

- 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. <https://doi.org/10.1016/j.advengsoft.2017.03.004>
- 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. <https://doi.org/10.1002/nme.5010>
- Pařík P. *An out-of-core sparse direct solver for very large finite element problems: Ph.D. 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. <https://doi.org/10.1556/pollack.4.2009.3.11>

### Invited talks and lectures

- 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.
- Invited talk: *Efficient direct solver for large finite element problems*, Institute of Mathematics, Czech Academy of Sciences, 2016/02/26.
- Invited talk: *Efficient direct solver for large finite element problems*, Institute of Computer Science, Czech Academy of Sciences, 2015/05/19.

### 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](http://www.pmd-fem.com)
  - English website: [www.vamet.cz/en/programs-PMD-and-GFEM.html](http://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