# Curriculum vitae

April 11, 2018


**Family name**: **Kolman**

**First name**: **Radek**

**Title**: Ing. (M.Sc.), Ph.D. (Dr.)

**Date of birth**: October 14, 1977

**Nationality**: Czech

**Marital status**: married (three children)

**Affiliation**: Institute of Thermomechanics, v.v.i. (IT CAS)
The Czech Academy of Sciences
Department D4 - Impact and Waves in Solids
Laboratory of Computational Solid Mechanics

**Address**: Dolejškova 1402/5
182 00 Prague 8
Czech Republic

**Position**: research scientist
head of the Laboratory of Computational Solid Mechanics
http://www.it.cas.cz/cs/kolmanr

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393 01 Pelhřimov
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**Researcher ID**: G-7839-2014
**Scopus ID**: 6603208878
**Researchgate**: www.researchgate.net/profile/Radek_Kolman

**Education**:

1992 - 1996 Secondary Technical School, Pelhřimov
Study program: Mechanical Engineering

1996 - 2002 **M.Sc. degree** at Faculty of Mechanical Engineering (FME), Czech Technical University in Prague (CTU Prague)
Study program: Applied Mechanics
Title of Ms. thesis: Simulation of sheet metal forming process and verification of PAM-STAMP$^{TM}$ Software

2002 - 2009 **PhD. degree** at Department of Mechanics, Biomechanics and Mechatronics, Faculty of Mechanical Engineering (FME), Czech Technical University in Prague (CTU Prague)
Study program: Mechanics of solids, deformable bodies and continua
Title of PhD. thesis: Dispersion properties of plane square serendipity finite element in elastodynamics

**Career/ employment**:

7/2001 - study stay at the Škoda Auto (one month)
1/2003 - 10/2009 - IT CAS (part-time, PhD. student position)
9/2004 - 8/2005 - Agrostroj Pelhřimov s.r.o. (part-time, designer, structural engineering, sheet metal forming specialist)
9/2005 - 10/2009 - Agrostroj Pelhřimov s.r.o. (full-time, designer, structural engineering, sheet metal forming specialist)
11/2009 -12/2011 - IT CAS (full-time, post-doctoral position)
since 1/2012 - IT CAS (full-time, research scientist position)
since 1/2013 - IT CAS (head of laboratory)

**Teaching**:

FME CTU courses:
2002 - 2004 Strength of Materials I, II
2001 - 2003 Plasticity and creep (part Plasticity)
FPTM J. E. Purkyně University in Ústí nad Labem:
2015 - 2016 Elasticity and strength
2015 - 2016 Mechanics

**Scientific internships**:

10/2012 - 12/2012 - Ocean System Engineering (OSE), Korea Advanced Institute of Science and Technology (KAIST), Daejeon, Korea
7/2013 - 8/2013 - OSE, KAIST, Daejeon, Korea
10/2013 - 11/2013 - OSE, KAIST, Daejeon, Korea
8/2016 - Korea Atomic Energy Research Institute, Daejeon, Korea

**Awards**:

2011 - the 2-nd place in the Prize of Prof. Ivo Babuška (awarded by the Czech Society for Mechanics and by the Czech Society for Mathematics and Physics) for the doctoral thesis

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| **Research activities**: | continuum mechanics, finite element method, isogeometric analysis, wave propagation, dispersion analysis, dynamics, vibration, static and dynamics contact problems, impact problems of solids, fracture mechanics, crack propagation, multi-scale modelling, numerical methods in wave propagation-like problems, deformation processes in solids, numerical methods in quantum mechanics, numerical methods in fluid-structure interactions. |
| **Publications**: | see the list of publications |
| **H-index (WoS)**: | 6 |
| **WoS citations**: | 81 |
| **Scopus citations**: | 94 |
| **WoS items**: | 22 |
| **Scopus items**: | 29 |
| **Invited lectures** | **2018**: Recent progress in numerical methods for explicit finite element analysis, In Applied Mechanics 2018, Myslovice, April 9, 2018.<br>**2018**: Applications of bipenalty method in contact-impact problems, In MAKUNET seminar, Aalborg University, February 2, 2018<br>**2018**: Applications of isogeometric analysis in free vibration problems, In MAKUNET seminar, Aalborg University, February 2, 2018<br>**2015**: Numerical solution of wave propagation problems in solids and dispersion analysis of finite element method and isogeometric analysis, In Current Problems in Numerical Analysis, Eds. M. Křížek, J. Šístek, T. Vejchodský, Mathematics Institute AS CR, v.v.i., Prague, January 9, 2015.<br>**2015**: Finite element method in impact problems, In Seminar of Apllied Mathematics, Eds. D. Lukáš, Department of Apllied Mathematics, VŠB - Technical University of Ostrava, Ostrava, March 31, 2015.<br>**2011**: Isogeometric analysis and conference SIGA, In Seminar of Numerical Mathematics, Eds. M. Feistauer, I. Marek., Department of Numerical Mathematics, Charles University in Prague, Prague, May 12, 2011. |
| **Professional competences**: | Consultant of 1 Master student<br>(title 'On the Mass Lumping in the Finite Element Method')<br>Consultant of 1 Ph.D. student |
| **Chairman of conference organizing committee**: | Spliny and IsoGeometric Analysis **SIGA 2011**, IT CAS, Prague, CR<br>Spliny and IsoGeometric Analysis **SIGA 2012**, IT CAS, Prague, CR<br>**EUROMECH Colloquium 540** - Advanced Modelling of Wave Propagation in Solids, IT CAS, Prague, CR, October 1-3, 2012<br>**Výpočty konstrukcí metodou konečných prvků**, IT CAS, Prague, CR, November 26, 2015 |

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| | **The 2nd International Conference on Advanced Modelling of Wave Propagation in Solids**, the ECCOMAS Regional Conference, IT CAS, Prague, CR, September 17-21, 2018 |
| **Organization of short courses**: | **An ECCOMAS Advanced Course on Computational Structural Dynamics**, IT CAS, Prague, CR, June 4–8, 2018<br>**An ECCOMAS Advanced Course on Computational Structural Dynamics**, IT CAS, Prague, CR, June 13-17, 2016 |
| **Chairman of conference nimi-Minisymposia**: | **ECNDT 2014**, Prague, MS with A. Berezovski on "Wave propagation in solids and structures"(9 speakers)<br>**COMPDYN 2015**, Crete, MS with J. Náprstek and K.C. Park on "Non-linear dynamics and wave propagation"(16 speakers)<br>**YIC ECCOMAS 2015**, Aachen, MS with A. Tkachuk on "Advances in numerical methods for structural dynamics and wave propagation phenomena"(7 speakers)<br>**WCCM 2016**, Seoul, MS with S.S. Cho, A. Tkachuk and K.C. Park on "Advanced Numerical Modelling and Methods in Impact Problems and Wave Propagation Phenomena in Solids"(9 speakers)<br>**COMPDYN 2017**, Rhodos, MS with J. Náprstek, A. Tkachuk and K.C. Park on "Non-linear dynamics and wave propagation"(13 speakers)<br>**WCCM 2018**, New York, MS with J. González and K.C. Park on "Advanced Numerical Modelling and Methods in Impact Problems and Wave Propagation Phenomena in Solids"(6 speakers) |
| **Reviewer of journals**: | Journal of Mechanical Engineering Science<br>Applications of Mathematics<br>Journal of Computational Physics<br>Computer Methods in Applied Mechanics and Engineering<br>International Journal for Numerical Methods in Engineering<br>Wave Motion<br>Applied Methematical Modelling<br>Acta Mechanica<br>Mathematical Problems in Engineering<br>Engineering Mechanics |
| **Guest editor of journal issue**: | Advances in Engineering Software, 2016, co-guest editor<br>Wave Motion 2018, co-guest editor<br>Computers & Mathematics with Applications 2018, co-guest editor |
| **Memberships**: | Central European Association for Computational Mechanics (CEACM)<br>Czech Society for Mechanics<br>The Union of Czech Mathematicians and Physicists |
| **Research projects** : | **IAA2076904**: Diagnostics of transient dynamic responses in plate and shell structures, AV0/IA, 1999-2003, member of team. |

**GACR 101/07/0588**: Nondestructive analyses of defects in thin wall shells
using acoustical wave propagation, GACR, 2007-2009, member of team.
**GACR 101/07/1471**: Finite element modelling of linear, non-linear and multi-scale effects in wave propagation in solids and heterogeneous media, GACR, 2007-2011, member of team.
**ME10114**: Numerical solution of impact/contact problems in non-linear finite element analysis, MSM/ME, 2010-2012, member of team.
**GACR 101/09/1630**: Numerical solution to steady-state and transient wave dispersion in mechanical systems on different scales, GACR, 2009-2013, member of team.
**GAP101/11/0288**: Design of intelligent composite structures, GACR, 2011-2014, member of team.
**GAP101/12/2315**: Modelling of acoustic wave propagation in strongly heterogeneous media; multi-scale numerical and analytical approaches, GACR, 2012-2016, member of team.
**GPP101/10/P376**: Study of dispersion properties of finite element method in elastic wave propagation problems, GACR, 2010-2012, post-doctorant project, applicant.
**TH01010772**: TACR, 2015-2017, member of team.
**ETA-15-03**: Advanced numerical modelling of dynamic processes in solids, Czech-estonian bilateral academic project, AS CR, 2015-2017, applicant with Dr. A. Berezovski (CENS, TUT Tallinn, Estonia).
DAAD-16-12: Advanced numerical methods for structural dynamics, contact-impact problems and wave propagation in solids, Czech-German bilateral academic project, AS CR, 2016-2017, applicant with Prof. M. Bischoff (Institute of Structural Mechanics, Uni. of Stuttgart, Germany).
**GACR 16-03823S**: Homogenization and multi-scale computational modelling of flow and nonlinear interactions in porous smart structures, GACR, 2016-2018, member of team.
**GACR 17-12925S**: Strength of materials and mechanical components based
on iron: Multi-scale approach, GACR, 2017-2019, member of team.
**GACR 17-22615S**: Time reversal ultrasonic signal processing used in nondestructive evaluation of materials and structures, GACR, 2017-2019, member of team.
**CZ.02.1.01/0.0/0.0/15_003/0000493**: Centre of Excellence for Nonlinear Dynamic Behaviour of Advanced Materials in Engineering (CeNDYNMAT), garant for wave propagationa and dynamic behaviour of materials. MŠMT, 2016-2022, member of team.

**Collaboration with industry**: CESKA ZBROJOVKA
CEZ GROUP

**Languages**: English - advanced
German - beginner

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| **Relevant skills**: | programming (Fortran, C++, Pascal)<br>FEM systems - ANSYS, MARC/MENTAT, PAM-STAMP, PMD<br>FE implementation - Tahoe (in C++), PMD (in Fortran 77)<br>CAD systems - Catia V.5 R.14, VisiCad V.13<br>other programmes: Matlab, Maple<br>clean driving licence |
| **Interests**: | travelling, history, mathematics, physics |

## List of publications

### Book chapters (2)

J. Plešek, R. Kolman, D. Gabriel. Dispersion Error of Finite Element Discretizations in Elastodynamics. Eds. B.H.V Topping, J.M. Adam, F.J. Pallarés, R.Bru, M.L. Romero. *Computational Technology Reviews*, Volume 1, pp. 251-279, 2010.

### Journal papers (17)

J. A. Gonzalez, R. Kolman, S.S. Cho, C. A. Felippa, K.C. Park. Inverse Mass Matrix via the Method of Localized Lagrange Multipliers, *International Journal for Numerical Methods in Engineering*, 2018, vol. 113(2) pp. 277-295, (IF=2.162).

J. Kopačka, A. Tkachuk, D. Gabriel, R. Kolman, M. Bischoff, J. Plešek. On stability and reflection-transmission analysis of the bipenalty method in impact-contact problems: a one-dimensional, homogeneous case study, *International Journal for Numerical Methods in Engineering*, 2018, vol. 113(10), pp. 1607-1629. (IF=2.162)

R. Cimrman, M. Novák, R. Kolman, M. Tůma, J. Plešek, J. Vackář. Convergence study of isogeometric analysis based on Bézier extraction in electronic structure calculations, *Applied Mathematics and Computation*, 2018, vol. 319, pp. 138–152. (IF=1.345).

R. Cimrman, M. Novák, R. Kolman, M. Tůma, J. Vackář. Isogeometric analysis in electronic structure calculations. *Mathematics and Computers in Simulation*, 2018, vol. 145, pp. 125–135. (IF=1.054).

V. Pelikán, P. Hora, A. Machová, R. Kolman, A. Uhnáková. Sample Geometry and the Brittle-ductile Behavior of Edge Cracks in 3D Atomistic Simulations by Molecular Dynamics, *Solid State Phenomena*, 2017, vol. 258 pp. 45-48. 2017, (IF=0.39).

S.V. Sorokin, R. Kolman, J. Kopačka. The boundary integral equations method for analysis of high-frequency vibrations of an elastic layer, Archive of Applied Mechanics, 2017, vol. 87, no. 4, pp. 737-750. (IF=1.103).

R. Kolman, M. Okrouhlik, A. Berezovski, J. Kopačka, D. Gabriel, J. Plešk. B-spline based finite element method in one-dimensional discontinuous elastic wave propagation, *Applied Mathematical Modelling*, 2017, vol. 46, pp. 382–395.(IF=2.291).

del Corro Elena, Sato Kentaro, Pe?a Miriam, Morales García Ángel, M. Bouša, M. Mračko, R. Kolman, L. Kavan, M. Kalbač, O. Frank. Fine Tuning of Optoelectronic Properties of Twisted Bilayer Graphene via Interlayer Distance Modulation, Physical Review B, 2017, vol. 95, 085138. (IF=3.718).

del Corro Elena, M.P. Alvarez, M. Mračko, R. Kolman, M. Kalbač, L. Kavan, O. Frank. Graphene under direct compression: stress effects and interlayer coupling, Physica Status Solidi B: Basic Solid State Physics, (Special Issue IWEPNM 2016: Electronic Properties of Novel Materials), 2016, vol. 252(12) pp. 2336–2341. (IF=1.522).

R. Kolman, S.S. Cho, K.C. Park. Efficient implementation of an explicit partitioned shear and longitudinal wave propagation algorithm. *International Journal for Numerical Methods in Engineering*, **107**(7), pp. 543–579, 2016. (IF=2.100).

R. Kolman, J. Plešek, J. Červ, M. Okrouhlík. Temporal-spatial dispersion and stability analysis of finite element method in explicit elastodynamics. *International Journal for Numerical Methods in Engineering*, **106**(2), pp. 113–128, 2016. (IF=2.055).

R. Kolman, S.V. Sorokin, B. Bastl, J. Kopačka, J. Plešek. Isogeometric analysis of free vibration of simple shaped elastic samples. *Journal of the Acoustical Society of America* **137**(4), pp. 2089–2100, 2015. (IF=1.646).

R. Kolman, J. Plešek, M. Okrouhlík. Complex wavenumber Fourier analysis of the B-spline based finite element method, *Wave Motion* **51**(2), pp. 348–359, 2014. (IF=1.467)

R. Kolman, J. Plešek, M. Okrouhlík, D. Gabriel. Grid dispersion analysis of plane square biquadratic serendipity finite elements in transient elastodynamics. *International Journal for Numerical Methods in Engineering* **96**(1), pp. 1–28, 2013. (IF=2.056)

D. Gabriel, J. Plešek, R. Kolman, F. Valeš. Dispersion of elastic waves in the contact-impact problem of a long cylinder. *Journal of Computational and Applied Mathematics*, **234**(6), pp. 1930-1936, 2010. (IF=1.030)

R. Kolman, J. Plešek, M. Landa. Finite Element Computational Technology for Composite Materials, *Materials Science Forum*, **482**, pp. 343-346, 2005. (IF=0.399)

J. Plešek, R. Kolman, M. Landa. Using Finite Element Method for the Determination of Elastic Moduli by Resonant Ultrasound Spectroscopy. *Journal of the Acoustical Society of America*, **116**(1), pp. 282-287, 2004. (IF=1.398)

**Non-impact journal papers**

R. Kolman, S.S. Cho, K.C. Park, K.C. On the diminishing of spurious oscillations in explicit finite element analysis of linear and non-linear wave propagation and contact problems. *The e-Journal of Nondestructive Testing*, **19**(4), pp. 1–7, 2014.

A. Berezovski, R. Kolman, J. Blažek, J. Kopačka, D. Gabriel, J. Plešek. Comparative study of finite element method, isogeometric analysis, and finite volume method in elastic wave propagation of stress discontinuities. *The e-Journal of Nondestructive Testing*, **19**(4), pp. 1–8, 2014.

R. Kolman. Isogeometric free vibration of elastic block. *Engineering mechanics* **19**(4), pp. 279–291, 2012.

J. Trnka, R. Kolman, P. Dvořáková, E. Veselý. A study of stress Wave propagation in thin plate loaded by an oblique impact. *International Review of Mechanical Engineering*, **3**(3), pp. 322-331, 2009.

R Kolman, J. Plešek, D. Gabriel, M. Okrouhlík. Optimization of lumping schemes for plane square quadratic finite element in elastodynamics. *Applied and Computational Mechanics*, **1**(1), pp. 105-114, 2007.

R. Kolman, J. Trnka, J. Plešek. Numerical-experimental analysis of stress waves propagation in a steel plate under perpendicular impact loadings, *Engineering Mechanics*, **11**(6), pp. 1-13, 2004.

**Conference papers and other contributions (appr. 50)**

R. Kolman, A. Berezovski, S.S. Cho, J. Kopačka, D. Gabriel, K. Tamm, J. Plešek, K.C. Park, Comparison of several numerical methods in one-dimensional discontinous elastic Wave propagation, In the 28th Nordic Seminar on Computational Mechanics, NSCM-28, A. Berezovski, K.Tamm, T.Peets (Eds.), CENS, Institute of Cybernetics at Tallinn University of Technology, 22 – 23 October, 2015, pp. 89–92, ISBN 978-9949-430-95-6, 2015.

R. Kolman, A. Berezovski, S.S. Cho, M. Okrouhlík, J. Kopačka, D. Gabriel, K. Tamm, J. Plešek, K.C. Park , Comparison of finite difference method, finite element method, isogeometric analysis and finite volume method in one-dimensional discontinuous elastic wave propagation, In the 31th conference Computational Mechanics, Hotel Horizont, Spicak, 9-11 November, 2015, ISBN 978-80-261-0568-8, CR-ROM. pp. 53–54.

R. Kolman, S.S. Cho, K.C. Park, Partitioned equations of motion for wave propagation problems in solids, Engineering Mechanics 2015. Prague : ITAM AS CR, v. v. i., 2015 - (Náprstek, J.; Fischer, C.). ISBN 978-80-86246-42-0, pp.142-143.

R. Kolman, S.S. Cho, K.C. Park, An explicit time scheme in finite element computations based on partitioned wave equations of solids, YIC GACM 2015, 3rd ECCOMAS Young Investigators Conference, 6th GACM Colloquium, July 20–23, 2015, Aachen, Germany, pp. 111.

R. Kolman, S.S. Cho, K.C. Park, Component-wise partitioned explicit finite element method: Benchmark tests for linear wave propagation in solids COMPDYN 2015 5th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, May 25–27, 2015 Crete Island, Greece.

R. Kolman, S.S. Cho, K.C. Park, Component-wise partitioned explicit finite element method: Nonlinear wave propagation and dynamic contact problems, COMPDYN 2015 5th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, May 25–27, 2015, Crete Island, Greece.

R. Cimrman, R. Kolman, T. Vejchodský, Convergence study of isogeometic analysis in Poisson problem, Výpočty konstrukcí metodou konečných prvků 2015, Eds. J. Plešek, D. Gabriel, R. Kolman, J. Masák, 26. listopadu, 2015, UT AV ČR, ISBN 978-80-87012-56-7, pp. 15-16.

R. Cimrman, M. Novák, R. Kolman, J. Vackář, Real-space ab-initio electronic structure calculations using SfePy, In the 31th conference Computational Mechanics, Hotel Horizont, Spicak, 9-1 November, 2015, ISBN 978-80-261-0568-8, CR-ROM. pp. 21–22.

R. Cimrman, M. Novák, R. Kolman, M. Tůma, J. Vackář, Using Isogeometric Analysis in Electronic Structure Calculations, International Conference on Computational Methods for Coupled Problems in Science and Engineering (COUPLED PROBLEMS 2015), 18–20 May 2015, San Servolo, Venice, Italy.

A. Berezovski, R. Kolman, J. Blažek, J. Kopačka, D. Gabriel, J. Plešek. Comparative study

of finite element method, isogeometric analysis, and finite volume method in elastic wave propagation of stress discontinuities. In the European Conference on Non-Destructive Testing (ECNDT), Prague, Czech Republic, 6-10 October, 2014. Brno: University of Technology, 2014. ISBN 978-80-214-5018-9.

R. Kolman, S.S. Cho, K.C. Park. An explicit time integration algorithm for finite element computations of discontinuous wave propagation problems. In the Colloquim Dynamics of Machines 2014, Prague, Czech Republic, February 4-5, 2014. Prague: Institute of Thermomechanics AS CR, v.v.i., 2014, Eds. L. Pešek, pp. 65-72 ISBN 978-80-87012-50-5.

R. Kolman, S.S. Cho, K.C. Park. Accurate explicit finite element method for wave propagation and dynamic contact problems. In the 11th World Congress on Computational Mechanics (WCCM XI), ECCM V and ECFD IV. Barcelona, Spain, July 20-25, 2014. Barcelona: International Center for Numerical Methods in Engineering, pp. 499-509, ISBN 978-84-942844-7-2.

R. Kolman, S.S. Cho, K.C. Park. On the diminishing of spurious oscillations in explicit finite element analysis of linear and non-linear wave propagation and contact problems. In the 11th European Conference on Non-Destructive Testing (ECNDT 2014), 6-10 October, 2014. Brno: University of Technology, 2014. ISBN 978-80-214-5018-9.

R. Kolman, S.S. Cho, J. Červ, K.C. Park. Component-wise partitioned finite element method in linear wave propagation problems: benchmark tests. In the Dynamics of machines and mechanical systems with interactions DYMAMESI 2014, Prague, Czech Republic, November 25-26, 2014. Prague : Institute of Thermomechanics AS CR, 2014, (Eds. I. Zolotarev, L. Pešek), pp. 31-36, ISBN 978-80-87012-54-3.

R. Kolman, S.S. Cho, K.C. Park. An accurate explicit finite element method in elasto-plastic wave propagation problems. In the IUTAM Symposium on Complexity of Nonlinear Waves, Tallinn, Estonia, August 08-12, 2014. Tallinn: Institute of Cybernetics at Tallinn University of Technology, Eds. A. Salupere, G. Maugin), pp. 67-68. ISBN 978-9949-430-77-2.

R. Kolman, S.S. Cho, J. Červ, K.C. Park. Component-wise partitioned finite element method for wave propagation and dynamic contact problems. In the Computational Mechanics 2014, Hotel Horizont, Špičák, Czech Republic, November 03-05, 2014. Book of extended abstracts. Plzeň : University of West Bohemia, Eds. V. Adámek, pp. 55-56, ISBN 978-80-261-0429-2.

R. Kolman, S.V. Sorokin, B. Bastl, J. Kopačka, J. Plešek. Isogeometric analysis in free vibration problems. In the Computational Mechanics 2014, Hotel Horizont, Špičák, Czech Republic, November 03-05, 2014. Book of extended abstracts. Plzeň : University of West Bohemia, Eds. V. Adámek, pp. 57-58, ISBN 978-80-261-0429-2.

R. Kolman, S.S. Cho, K.C. Park. On an accurate explicit time integration algorithm for wave propagation problems in solids. In the Modelling 2014, Rožnov pod Radhoštěm, Czech Republic. Ostrava: Institute of Geonics AS CR, Eds. R. Blaheta, J. Starý, D. Sysalová, pp. 58-58, 2014, ISBN 978-80-86407-47-0.

D. Gabriel, J. Kopačka, J. Plešek, R. Kolman. Contact-impact treatment based on the bipenalty technique in explicit transient dynamics. In the 11th World Congress on Computational Mechanics (WCCM XI) and ECCM V and ECFD IV. In the 11th World Congress on Com-

putational Mechanics (WCCM XI), ECCM V and ECFD IV. Barcelona, Spain, July 20-25, 2014.

J. Kopačka, D. Gabriel, J. Plešek, R. Kolman. Influence of mass lumping techniques on contact pressure oscillations in explicit finite element contact-impact algorithm based on isogeometric analysis with NURBS. In the Stability, Vibration, and Control of Machines and Structures 2014, Bělehrad, July 03-05, 2014. Mnichov: Springer, Eds. A. Guran, J. Gwinner, pp. 130-141, 2014, ISBN 978-80-8075-655-0.

J. Kopačka, D. Gabriel, R. Kolman, J. Plešek. Isogeometric contact analysis: a study of an explicit dynamic contact algorithm. In FEM Computations of Structures, Plzeň, Czech Republiv, November 11, 2014. Plzeň: The University of West Bohemia in Plzeň, Eds. V. Laš, J. Krystek, pp. 30-35, 2014, ISBN 978-80-261-0445-2.

J. Kopačka, D. Gabriel, J. Plešek, R. Kolman. Influence of mass lumping techniques on contact pressure oscillations in explicit contact-impact algorithm based on isogeometric analysis. In the IUTAM Symposium on Complexity of Nonlinear Waves, Tallinn, Estonia, August 08-12, 2014. Tallinn: Institute of Cybernetics at Tallinn University of Technology, Eds. A. Salupere, G. Maugin), pp. 93-94. ISBN 978-9949-430-77-2.

J. Kopačka, D. Gabriel, R. Kolman, J. Plešek. Influence of mass lumping techniques on contact pressure oscillations in explicit finite element contact-impact algorithm based on isogeometric analysis with NURBS. In the Modelling 2014, Rožnov pod Radhoštěm, Czech Republic. Ostrava: Institute of Geonics AS CR, Eds. R. Blaheta, J. Starý, D. Sysalová), pp. 59-59, 2014, ISBN 978-80-86407-47-0.

R. Cimrman, M. Novák, R. Kolman, M. Tůma, J. Vackář. Isogeometric analysis in electronic structure calculations. In the Modelling 2014, Rožnov pod Radhoštěm, Czech Republic. Ostrava: Institute of Geonics AS CR, Eds. R. Blaheta, J. Starý, D. Sysalová), pp. 49-49, 2014, ISBN 978-80-86407-47-0.

R. Kolman, S.S. Cho, K.C. Park. Nearly non-spurious oscillations time scheme in finite element analysis of non-linear wave propagation and dynamic fracture mechanics. In the Third International Conference on Computational Modeling of Fracture and Failure of Materials and Structures (CFRAC 2013), Prague, Czech Republic, June 5-7, 2013.

R. Kolman, S.S. Cho, K.C. Park. Non-spurious oscillations time integration method in finite element analysis of non-linear wave propagation of stress Discontinuities. In the 4th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering COMPDYN 2013, Kos, Greece, June 12-14, 2013.

R. Kolman, J. Plešek, M. Okrouhlík, D. Gabriel, J. Kopačka. Verification of isogeometric analysis in elastic wave propagation of stress discontinuities. In the 4th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering COMPDYN 2013, Kos, Greece, June 12-14, 2013.

J. Kopačka, D. Gabriel, R. Kolman, J. Plešek, M. Ulbin. Studies in numerical stability of explicit contact-impact algorithm to the finite element solution of wave propagation problems. In the 4th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering COMPDYN 2013, Kos, Greece, June 12-14, 2013.

J. Plešek, J. Kopačka, D. Gabriel, R. Kolman. Contact-impact treatment in explicit transient dynamics using isogeometric analysis with nurbs. In the 4th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering COMPDYN 2013, Kos, Greece, June 12-14, 2013.

S.S. Cho, K.C. Park, R. Kolman. A method for computation of wave propagation in heterogeneous solids: implementation and performance. Proceedings ASME. 56437; Volume 14: Vibration, Acoustics and Wave Propagation, V014T15A040, November 15, 2013, IMECE2013-65790, pp. 1-2. doi: 10.1115/IMECE2013-65790

R. Kolman Radek; S.S. Cho; K.C. Park. Explicit time integrations for finite element computations of wave propagation. Výpočty konstrukcí metodou konečných prvků 2010, Jednodenní seminář, in Czech, FME CTU, Prague, November 28, 2013.

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