

CURRICULUM VITÆ

PERSONAL DATA

Name: Martin Plešinger
Date of birth: April 16, 1980
Place of birth: Liberec, Czechoslovakia
Citizenship: Czechia (Czech Republic), EU
E-mail address: martin.plesinger@cs.cas.cz, @tul.cz
Web-page: <http://kmd.fp.tul.cz/~plesinger/index.html>



EDUCATION

- School-leaving exam in Mechanical Engineering at Technical School in Mechanical Engineering and Electrotechnics (SPŠSE), Liberec, 1998.
- Ing. degree in Science Engineering (M.Sc. equivalent in the Czechia) at Technical University of Liberec (TUL), Faculty of Mechatronics and Interdisciplinary Engineering (FM), 2004.
 - Courses (among many others):
 - Numerical methods in linear algebra, Prof. ZDENĚK STRAKOŠ,
 - Implementation of numerical methods, PROF. LADISLAV LUKŠAN (nonlinear optimization), Prof. MIROSLAV TŮMA, and Doc. MIRO ROZLOŽNÍK (parallel computing and computers).
 - School research (bachelor) project: “Simulation of Turonian Aquifer Remediation Process” (in Czech), 2002–2003. Supervisor of the school research project: RNDr. JAN NOVÁK, Ph.D. (in cooperation with the Mathematical Modeling Research Center, DIAMO, state enterprise).
 - Diploma (master) thesis: “Selected Numerical Linear Algebra Problems in Control Theory” (in Czech), 2004. Supervisor of the diploma thesis: Prof. Ing. ZDENĚK STRAKOŠ, DrSc.
- Ph.D. degree in Science Engineering at Technical University of Liberec, Faculty of Mechatronics and Interdisciplinary Engineering, 2008.
 - Courses (among others):
 - Introduction to functional analysis, Prof. IVO MAREK and Prof. LADISLAV LUKŠAN,
 - Introduction to numerical methods, Prof. ZDENĚK STRAKOŠ,
 - Computer architectures and programming tools, Prof. MIROSLAV TŮMA,
 - Matrix theory and its applications in numerical mathematics, Prof. MIROSLAV FIEDLER.
 - Doctoral thesis: “The Total Least Squares Problem and Reduction of Data in $AX \approx B$ ”, 2008. Supervisor of the doctoral thesis: Prof. Ing. ZDENĚK STRAKOŠ, DrSc.
AWARDED the Jiří Zelenka Prize of Technical University of Liberec for the excellent doctoral thesis (2008).
- Post-doc projects:
 - Seminar for Applied Mathematics, Dept. of Math., ETH Zürich. SciEX project No 09.071. Mentor Prof. Daniel Kressner (2010–2011).
 - Department of Mathematics, TU Liberec. ESF OPVK project No CZ.1.07/2.3.00/30.0065. Mentor Prof. Ivo Marek (2013–2015).
- Habilitation (Doc.) in Applied Mathematics at VŠB–Technical University of Ostrava, Faculty of Electrical Engineering and Computer Science, 2018, with habilitation thesis: “Matrix and Tensor Computations. Analysis and Applications” (collection of papers published in years 2009–2016 with Czech commentary; submitted 2016).

FURTHER EDUCATION (SEMINARS, COURSES, WORKSHOPS, SUMMER AND WINTER SCHOOLS)

- Summer school in “Control of Solids and Structures”, International Centre for Mechanical Sciences, Udine, Italy, 2004.
- Series of internat. summer schools (and workshops) in Numerical Linear Algebra and Applications, Istituto per le Applicazioni del Calcolo, Consiglio Nazionale delle Ricerche, Monopoli-Bari, Italy:
 - 3rd School in “Numerical Linear Algebra in Image Deblurring”, 2005,
 - 4th School (workshop) in “Numerical Linear Algebra in Signals and Systems”, 2006, and
 - 6th School in “Linear Systems Theory, Control and Matrix Computations”, 2008.
- Series of “Winter Schools in High-performance and Parallel Computers, Programming Technologies, and Numerical Linear Algebra”, organized as a part of SNA conferences by:
 - Institute of Geonics, AS CR & VŠB–TUO, in Ostrava, 2005, 2007, 2009, 2015, 2017, 2019,
 - Institute of Computer Science (ICS), AS CR, in Sedlec–Prčice, 2006,
 - ICS & Faculty of Mechatronics, TU Liberec, in Liberec, 2008,
 - ICS & Institute of System Biology and Ecology, AS CR, in Nové Hradky, 2010,
 - Institute of Geonics, AS CR, in Rožnov pod Radhoštěm, 2011, 2013,
 - ICS & Faculty of Education, TU Liberec, in Liberec, 2012, and
 - Institute of Computer Science (ICS), AS CR, Nymburk, 2014.
- Series of summer schools “SDE: Seminar in Differential Equations”, Faculty of Applied Sciences, University of West Bohemia in Pilsen (ZČU):
 - SDE XXVI, in Kamenice nad Lipou, 2008,
 - SDE XXVIII, in Deštné v Orlických horách, 2012, and
 - SDE XXXI, in Velehrad, 2018.
- SIAG/LA–Simumat “International Summer School on Numerical Linear Algebra”, CIEM Castro Urdiales, Spain, 2008.
- Winter school: “New trends in scientific computing”, Centre International de Rencontres Mathématiques (CIRM), Luminy–Marseille, and Laboratoire d’Analyse, Topologie et Probabilité, Marseille, France, 2009.
- SNF Pro*Doc Graduate School Workshop Disentis, Switzerland, August 18–21, 2010.
- Zürich Summer School (ZSS): “Sparse Tensor Discretizations of High-Dimensional Problems”, Seminar für angewandte Mathematik, ETH Zürich, Switzerland, August 23–27, 2010.
- Swiss Numerics Colloquium, ICS, Faculty of Informatics, Università della Svizzera italiana, Lugano, May 6, 2011.
- Advanced courses attended during the post-doc stay at ETH Zürich:
 - Tensor–structured Numerical Methods in Scientific Computing (MAT814), Prof. BORIS N. KHOROMSKIJ, Max–Planck Institute (MPI) Leipzig (visiting Universität Zürich (UZH)),
 - Compressive Sensing (401-4654-11L), Prof. HOLGER RAUHUT, Institut für Numerische Simulation, Universität Bonn (visiting ETH, under Pro*Doc NumPDE project),
 - Colloquium in Numerical and Applied Mathematics (SAM Kolloquia).
- EMS School in Applied Mathematics (ESSAM) on “Mathematical Modelling, Numerical Analysis and Scientific Computing”, Faculty of Mathematics and Physics, Charles University in Prague, Kácov, 2016 and 2018.



EMPLOYMENT AND GRANT PARTICIPATION

- **January 2003–December 2004:** Freelancer in computer programming, collaboration in particular with the *Mathematical Modeling Research Center, DIAMO, state enterprise*.
- **July 2004–present (short contract):** Institute of Computer Science, Academy of Sciences of the Czech Republic (Dept. of Computational Methods, Odd. 21), Ph.D. student (till 2008), post-doc (till 2014), scientific assistant (till 2015), and researcher.
 - Participation on the national “Information Society” project N_o 1ET400300415: MSTEP, Modeling and Simulation of complex Technical Problems (Z. Strakoš), 2004–2008.
(<http://www2.cs.cas.cz/mweb>)
 - Participation on the GAAS research grant N_o IAA100300802: KRYLOV, Theory of Krylov subspace methods and its relationship to other mathematical disciplines (Z. Strakoš), 2009–2012.
(<http://www.cs.cas.cz/krylov>)
 - Participation on the GAČR research grant N_o GA13–06684S: IMAPA, Iterative Methods of computational mathematics: Analysis, Preconditioning, and Applications (M. Tůma), 2013–2017.
(<http://www.cs.cas.cz/imapa>)
- **December 2004–December 2011 (since July 2010 shortened):** Faculty of Mechatronics (FM), Technical University of Liberec (Dept. of Modelling of Processes (KMO), then Inst. of Novel Technologies and Applied Informatics (NTI)), Ph.D. student (till 2008), lecturer, and researcher.
 - Participation on the MŠMT “Research Centre” grant N_o 1M0554: ARTEC, Advanced Remediation TEchnologies and processes (J. Maryška), *several occasional short-term contracts*.
(<http://artec.tul.cz>)
 - Participation on internal development project (internal TUL grant) N_o 1257: Podpora talentovaných studentů a absolventů DSP na TUL (J. Nouza), 2009.
 - Internal grant N_o FM-IG/2009/NTI-02: Golub–Kahanova bidiagonalizace, implementace a numerické vlastnosti (with K. Jurková, J. Ševic), 2009.
 - Internal grant N_o FM-IG/2010/NTI-02: Řešení soustav lineárních algebraických rovnic vzniklých diskretizací parciálních diferenciálních rovnic obsahujících parametry zatížené nejistotami (with L. Kosková), 2010.
- **Fall semesters in years 2007/08–2009/10 (short term teaching contracts):** Faculty of Education (FP), TU Liberec (Dept. of Applied Mathematics (KAP), and Dept. of Mathematics and Didactics of Mathematics (KMD)), lecturer assistant.
- **July 2010–June 2011:** Seminar for Applied Mathematics (Seminar für angewandte Mathematik (SAM)), Dept. of Mathematics, Swiss Federal Institute of Technology (ETH) Zürich, post-doc and lecturer assistant.
 - Fellow of SciEX–NMS^{ch} program with project N_o 09.071: KRYMOR, Preconditioned KRYlov subspace methods for large scale Model Reduction (D. Kressner (the host mentor) and with Z. Strakoš (the home mentor)), 2010–2011.
- **September 2011–present:** Faculty of Education (FP), TU Liberec (Dept. of Mathematics and Didactics of Mathematics (KMD)), lecturer and researcher; since July 2016 deputy-head of KMD; since February 2019 vice-dean for science, research, and Ph.D. studies at FP.
 - Participation on the ESF research project N_o CZ.1.07/2.3.00/09.0155: Constitution and improvement of a team for demanding technical computations on parallel computers at TU Liberec (V. Finěk), 2011–2012.
(<http://kmd.fp.tul.cz/old/ESF1615/esf1615.htm>)
 - Participation on the ESF development project N_o CZ.1.07/2.2.00/18.0025: Distance studies for teachers at Faculty of education of TU Liberec (J. Šmída), fall semester 2012.
(<http://kombinovanastudia.fp.tul.cz/projekt>)
 - Participation on the ESF research project N_o CZ.1.07/2.3.00/30.0065: Support of the creation of excellent research and development teams at the TU Liberec (M. Malý), 2013–2015.
(<http://www.ft.tul.cz/files/microsites/VaVTUL>)

- Internal grant N_o FP-SGS/2016/21161: Total least squares problem and its tensor generalizations (with J. Žáková), 2016.
- Participation on the ESF development project N_o CZ.02.2.69/0.0/0.0/16_015/0002329: RoLiZ, The educational infrastructure of the TUL to raise the relevance, quality and advancement of education in the age of industry 4.0 (M. Hernych), 10–12/2017. (<https://www.tul.cz/roliz>)
- Advisor-participation on internal Ph.D. grant N_o FP-SGS/2018/21254: Tensor methods and their analysis in numerical linear algebra (J. Žáková), 2018.
- Advisor-participation on internal Ph.D. grant N_o FP-SGS/2019/21319: Numerical methods in matrix and tensor computations (J. Žáková), 2019.
- **Spring semester in year 2011/12 (short term teaching contract):** Faculty of Mechatronics, TU Liberec (NTI), lecturer.



STAYS ABROAD

LONG TERM STAYS

- July 2010–June 2011: Seminar for Applied Mathematics (Seminar für angewandte Mathematik), Dept. of Mathematics, Swiss Federal Institute of Technology (ETH) Zürich. *Post-doc position* mentored by Prof. Daniel Kressner. Funded by the Rektorenkonferenz der Schweizer Universitäten (<http://www.crus.ch>) and the European Union through the Scientific Exchange program SCIEEX (<http://www.sciex.ch>), guaranteed by Prof. Daniel Kressner (ETH Zürich) and Prof. Zdeněk Strakoš (Charles University, Prague).
- July 2013–September 2013: *Visiting Fellow position* at Departement Elektrotechniek–ESAT, Katholieke Universiteit Leuven, Belgium. Visiting Prof. Sabine Van Huffel and Dr. Diana Maria Sima. Funded by the post-doc project the ESF project N_o CZ.1.07/2.3.00/30.0065, TU Liberec.
- June 2014–July 2014: *Visiting Fellow position* at DTU Compute – Department of Applied Mathematics and Computer Science, Danmarks Tekniske Universitet, Lyngby, Denmark. Visiting Prof. Per Christian Hansen (and Prof. William Lionheard from University of Manchester). Funded by the post-doc project the ESF project N_o CZ.1.07/2.3.00/30.0065, TU Liberec.

SHORT TERM STAYS

- Visiting Prof. Sabine Van Huffel and Dr. Diana Maria Sima, Departement Elektrotechniek–ESAT, Katholieke Universiteit Leuven, Belgium (February 2007).
- Visiting Prof. Per Christian Hansen, Istitut for Informatik og Matematisk Modellering, Danmarks Tekniske Universitet, Lyngby, Denmark (April 2009, June 2010).



STUDENTS SUPERVISING

BACHELOR THESES (successfully defended)

- JAROSLAV ŠEVIC: *Golub–Kahan bidiagonalization, its implementation, and numerical experiments* (in Czech: *Golub–Kahanova bidiagonalizace, její implementace a numerické experimenty*), FM, TU Liberec, 2008/09.
- FILIP JÁGR: *The core problem within a linear approximation problem $Ax \approx b$ with the single right-hand side* (in Czech: *Core problém v lineární aproximační úloze $Ax \approx b$ s jednou pravou stranou*), FP, TU Liberec, 2013/14–2014/15.
- MARKÉTA HEJLOVÁ: *Google’s PageRank: Ranking of web pages and the eigenvalue problems* (in Czech: *Google PageRank: Relevance webových stránek a problém vlastních čísel*), FP, TU Liberec, 2014/15.
- JANA ŽÁKOVÁ: *Tensors and canonic densor decompositions: Tucker decomposition* (in Czech: *Tensory a kanonické tenzorové rozklady: Tuckerův rozklad*), FP, TU Liberec, 2014/15.

AWARDED the Dean's Prize for the excellent bachelor thesis (2015).

- BARBORA KOŠKOVÁ: *Hierarchical matrices: A contemporary approach for large-scale dense matrices* (in Czech: *Hierarchické matice: Moderní přístup k práci s velkými hustými maticemi*), FP, TU Liberec, 2017/18.
- KATEŘINA STOLÍNOVÁ: *"Batman decomposition" of a symmetric indefinite matrix* (in Czech: *„Batman decomposition“ symetrické indefinitní matice*), FP, TU Liberec, 2017/18.

MASTER THESES (successfully defended)

- JANA ŽÁKOVÁ: *Tensor networks and hierarchical Tucker decomposition* (in Czech: *Tenzorové sítě a hierarchický Tuckerův rozklad*), FP, TU Liberec, 2016/17.
- AWARDED** the Rector's Prize for the excellent master thesis (2017).

OTHER

- KATEŘINA ČIHÁČKOVÁ: *Nisa mechanical calculator, its history, principles, and applications* (in Czech: *Mechanický kalkulátor Nisa, jeho historie, konstrukce a užití*), FP, TU Liberec, 2018. Bachelor thesis in preparation.

TEACHING EXPERIENCE

SPECIAL TUTORIALS

- *Ill-Posed Inverse Problems in Image Processing: Introduction, Structured matrices, Spectral filtering, Regularization, Noise revealing*, Winter School in High-Performance and Parallel Computers, Programming Technologies, and Numerical Linear Algebra, Rožnov pod Radhoštěm, 2011.
INVITED tutorial of three lectures, one presented by I. Hnětynková.
- *On the Way from Matrix to Tensor Computations: Introduction, Basic arithmetics, Tensor decompositions, Hierarchical formats, and Tensor networks*, Winter School on Methods of Numerical Mathematics and Modelling, High-Performance Computing, and Numerical Linear Algebra, Ostrava, 2019.
INVITED tutorial of two lectures.

LECTURES

- Numerical Methods of Linear Algebra (Numerické metody algebry, NMA, NMAX), master degree course (mandatory, since 2011 optional), lecturer & assistant, FM, TU Liberec, 2006/07–2009/10, 2011/12–2012/13 (spring semester).
- Numerical Methods of Linear Algebra (Numerické metody algebry, NMA), bachelor & master degree course (optional), lecturer & assistant, FP, TU Liberec, 2015/16 (both semesters) 2016/17 (fall semester).
- Implementation of Numerical Methods (Implementace numerických metod, INM), master degree course (mandatory, since 2011 optional), lecturer & assistant, FM, TU Liberec, 2009/10, 2011/12 (fall semester).
- Applications of Numerical Linear Algebra (Aplikace numerické lineární algebry, ANLA), master degree course (optional), lecturer & assistant, FM, TU Liberec, 2009/10 (spring semester).
- Algebra and Geometry 1 (Algebra a geometrie 1, AG1, AG1K; linear algebra), bachelor degree course (mandatory), lecturer & assistant, FP, TU Liberec, 2012/13–2018/19 (fall semester).
- Algebra and Geometry 2 (Algebra a geometrie 2, AG2E, AG2K; general algebra), bachelor degree course (mandatory), lecturer & assistant, FP, TU Liberec, 2012/13–2017/18 (spring semester).
- Modern Methods of Linear Algebra (Moderní metody lineární algebry, MLA, MLAU), bachelor/master degree course (mandatory/optional; depending on the study program), lecturer & assistant, FP, TU Liberec 2016/17–2017/18 (spring semester).
- Mathematical Structures (Matematické struktury, MAS, MASU), bachelor/master degree course (mandatory/optional; depending on the study program), lecturer & assistant, FP, TU Liberec 2018/19 (fall semester).

SEMINARS

- Ph.D. Seminar at NTI (Doktorandský seminář ústavu NTI), doctoral degree course (mandatory), organizer, NTI, FM, TU Liberec, 2005/06–2009/10 (both semesters).
 - Inverse Problems in Image Processing (401-3670-60 L/S), bachelor & master degree course/seminar (optional), organizer and lecturer (with Effrosyni Kokiopoulou), SAM, D-MATH, ETH Zürich, 2010/11 (fall semester). Seminar was based on selected chapters from books:
 - HANSEN, NAGY, O'LEARY: *Deblurring Images: Matrices, Spectra, and Filtering*, FA03, SIAM, 2006.
 - HANSEN: *Discrete Inverse Problems: Insight and Algorithms*, FA07, SIAM, 2010.
 - Bachelor Thesis Seminar (Výběrový seminář (práce k Bc.), VBS; \LaTeX), bachelor degree seminar (optional), KMD, FP, TU Liberec, 2014/15, 2017/18 (spring semester).
 - Lectures on Mathematics and Didactics of Mathematics (Seminář z matematiky a didaktiky matematiky, SMDM), optional seminar, KMD, FP, TU Liberec, 2018/19 (fall semester).
- Seminar is coorganized with several other people and coincides with two department seminars:
- *KO-MIX — Seminar on Mathematics* and
 - *Seminar on Didactics of Mathematics*

held on KMD.

ASSISTANCE ONLY

- Finite Element Method (Metoda konečných prvků, MKP), master degree course (mandatory), assistant (lecturers J. Maryška, Z. Strakoš), FM, TU Liberec, 2004/05–2005/06 (half of fall semester).
- Numerical Methods of Linear Algebra (Numerické metody algebry, NMA), master degree course (mandatory), assistant (lecturer Z. Strakoš), FM, TU Liberec, 2004/05–2005/06 (spring semester).
- Introduction to Linear Algebra and Discrete Mathematics (Úvod do lineární algebry a diskrétní matematiky, ULA), bachelor degree course (mandatory), assistant (lecturer M. Rozložník), FM in cooperation with FP, TU Liberec, 2007/08–2009/10 (fall semester).
- Linear Algebra and Geometry (Lineární algebra a geometrie, LAG), bachelor degree course (mandatory), assistant (lecturer M. Rozložník, since 2011 M. Cvrček), FM in cooperation with FP, TU Liberec, 2007/08–2009/10, 2011/12–2012/13 (fall semester).
- Mathematical Seminar (Matematický seminář, SEM; selected topics from math), bachelor degree course (mandatory), assistant, FM, TU Liberec, 2007/08–2008/09 (spring semester).
- Linear Algebra and Differential Calculus (Lineární algebra a diferenciální počet, LADP), bachelor degree course (mandatory), assistant (lecturer J. Mlýnek), Institute of Health Studies (USZ) in cooperation with FP, TU Liberec, 2011/12 (fall semester).
- Algebra and Geometry 2 (Algebra a geometrie 2, AG2E; general algebra), bachelor degree course (mandatory), assistant (lecturer J. Vild), FP, TU Liberec, 2011/12 (spring semester).
- Mathematics for Sciences (Matematika pro přírodní vědy, MPV; elementar calculus and linear algebra), bachelor degree course (mandatory), assistant (lecturer J. Mlýnek), FP, TU Liberec, 2011/12 (fall semester).
- Mathematics (Matematika, MA*H; basic calculus and basic linear algebra), bachelor degree course (mandatory), assistant (lecturer D. Bittnerová), Faculty of Economics (EF) in cooperation with FP, TU Liberec, 2015/16 (spring semester).
- Mathematics 1 (Matematika 1, MA1*H; basic calculus), bachelor degree course (mandatory), assistant (lecturers D. Bittnerová, J. Mlýnek), Faculty of Economics (EF) in cooperation with FP, TU Liberec, 2011/12, 2014/15–2016/17 (fall semester).
- Mathematics 1 (Matematika 1, MA1-M; basic calculus), bachelor degree course (mandatory), assistant (lecturer V. Finěk), FM in cooperation with FP, TU Liberec, 2012/13–2013/14 (fall semester).
- Mathematics 1 (Matematika 3, M1A-P; basic calculus), bachelor degree course (mandatory), assistant (lecturers J. Hozman, P. Salač), FS in cooperation with FP, TU Liberec, 2016/17 (fall semester).

- Mathematics 2 (Matematika 2, MA2*H; basic linear algebra, calculus of bivariate functions, simple ODEs), bachelor degree course (mandatory), assistant (lecturers D. Bittnerová, J. Mlýnek), EF in cooperation with FP, TU Liberec, 2011/12 (spring semester).
- Mathematics 2A (Matematika 2A, M2A; basic linear algebra (with Matlab)), bachelor degree course (optional), assistant (lecturer M. Cvrček), FM-nano in cooperation with FP, TU Liberec, 2012/13 (spring semester).
- Mathematics 3 (Matematika 3, MA3-P; numerical mathematics (with Matlab)), bachelor degree course (mandatory), assistant (lecturer D. Černá), FS in cooperation with FP, TU Liberec, 2013/14 (fall semester).



OTHER PROFESSIONAL ACTIVITIES

LOCAL CO-ORGANIZING OF CONFERENCES

- 7th European Conference on Applications of Polar Dielectrics ECAPD7, Liberec, 2004.
- Computational Methods with Applications, Harrachov, 2007.
- 24th Congress of the Czechoslovak Society for Microbiology, Liberec, 2007.
- Seminar on Numerical Analysis, SNA'08, Liberec (TUL, FM, NTI), 2008.
- Seminar on Numerical Analysis, SNA'12, Liberec (TUL, FP, KMD), 2012.
- International Conf. on Presentation of Mathematics, ICPM'14, Liberec (TUL, FP, KMD), 2014.

ORGANIZING OF CONFERENCES AND WORKSHOPS

- SiMoNA 2009, Workshop of the Research Centre: Advanced Remediation Technologies and Processes, ARTEC, Liberec, 2009.

OTHER ACTIVITIES

- *Zentralblatt MATH* reviewer, since February 2009 (Czech editorial unit Prague, and editorial unit Berlin/Karlsruhe).
- Member of *GAMM* (Gesellschaft für angewandte Mathematik und Mechanik) *ANLA* (Applied and Numerical Linear Algebra) *activity group*, since August 2011.
(<http://www.maths.manchester.ac.uk/gamm-anla>)
- Member of *JČMF* (Jednota českých matematiků a fyziků; The Union of Czech Mathematicians and Physicists), since October 2011. (<http://www.jcmf.cz>, <http://www.jcmf.cz/?q=en>)
 - Member of *ČMS (CMS) section* (Česká matematická společnost; Czech Mathematical Society). Member of the committee of CMS and the second vice-chairman, since February 2018.
(<http://cms.jcmf.cz>)
- Member of *EU-Maths-In Czech Network for Mathematics in Industry*, since January 2015.
(<http://eu-maths-in.cz>)
- Associate member of *Charles University in Prague Chapter of SIAM*, since July 2016.
(<http://siam.cuni.cz>, <http://siam.cuni.cz/en>)



LIST OF PUBLICATIONS

SCHOOL RESEARCH PROJECT, DIPLOMA AND DOCTORAL THESES

- [T1] M. PLEŠINGER: *Simulation of Turonian Aquifer Remediation Process* (in Czech: *Model sanace turonské zvodně*), FM TUL, Liberec, 2003, viii+78 pages. School research (bachelor) project, supervised by J. Novák (in cooperation with the Mathematical Modeling Research Center, DIAMO, state enterprise).
- [T2] M. PLEŠINGER: *Selected Numerical Linear Algebra Problems in Control Theory* (in Czech: *Vybrané problémy numerické lineární algebry v teorii řízení*), FM TUL, Liberec, 2004, 75 pages. Diploma (master) thesis, supervised by Z. Strakoš.
- [T3] M. PLEŠINGER: *The Total Least Squares Problem and Reduction of Data in $AX \approx B$* , FM TUL, Liberec, 2008, xx+146 pages. Doctoral thesis, supervised by Z. Strakoš.
AWARDED the Jiří Zelenka Prize of Technical University of Liberec for the excellent doctoral thesis (2008).
- [T4] M. PLEŠINGER: *Matrix and Tensor Computations. Analysis and Applications* (in Czech: *Maticové a tenzorové výpočty. Analýza a aplikace*) FEI VŠB–TUO, Liberec, Ostrava, 2016, xiv+199 pages. Habilitation thesis (collection of papers published in years 2009–2016 with Czech commentary).

BOOKS

- [B1] E. J. DUINTJER TEBBENS, I. HNĚTYNKOVÁ, M. PLEŠINGER, Z. STRAKOŠ, AND P. TICHÝ: *Analysis of methods for matrix computations. Basic methods* (in Czech: *Analýza metod pro maticové výpočty. Základní metody*), Matfyzpress,
 - 1st impression, August 2012, xvi+308 pages;
 - 2nd impression, November 2012, xvi+312 pages.ISBN 978-80-7378-201-6. Monograph. (<http://sites.google.com/site/maticovevypocty>)
AWARDED the Jaroslav Jirsa Prize of Charles University in Prague for the best textbook of the year 2012, in the category Natural Science, Mathematics, and Physics (2013).

PAPERS IN JOURNALS (Circa 30 citations in total, according to WoS)

- [J_{IMP}1] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *The regularizing effect of the Golub–Kahan iterative bidiagonalization and revealing the noise level in the data*, BIT Numerical Mathematics, Volume 49, Issue 4 (2009), pp. 669–696.
DOI: [10.1007/s10543-009-0239-7](https://doi.org/10.1007/s10543-009-0239-7).
(<https://link.springer.com/article/10.1007/s10543-009-0239-7>)
- [J_{IMP}2] I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *The total least squares problem in $AX \approx B$: A new classification with the relationship to the classical works*, SIMAX, SIAM J. on Matrix Analysis and Applications, Volume 32, Issue 3 (2011), pp. 748–770.
DOI: [10.1137/100813348](https://doi.org/10.1137/100813348).
(<https://epubs.siam.org/doi/10.1137/100813348>)
- [J_{IMP}3] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *The core problem within a linear approximation problems $AX \approx B$ with multiple right-hand sides*, SIMAX, SIAM J. on Matrix Analysis and Applications, Volume 34, Issue 3 (2013), pp. 917–931.
DOI: [10.1137/120884237](https://doi.org/10.1137/120884237).
(<https://epubs.siam.org/doi/10.1137/120884237>)
- [J_{IMP}4] D. KRESSNER, M. PLEŠINGER, AND C. TOBLER: *A preconditioned low-rank CG method for parameter-dependent Lyapunov matrix equations*, NLA, Numerical Linear Algebra with Applications, Volume 21, Issue 5 (2014), pp. 666–684.
DOI: [10.1002/nla.1919](https://doi.org/10.1002/nla.1919).
(<https://onlinelibrary.wiley.com/doi/10.1002/nla.1919>)

- [J_{IMP}5] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Band generalization of the Golub–Kahan bidiagonalization, generalized Jacobi matrices, and the core problem*, SIMAX, SIAM J. on Matrix Analysis and Applications, Volume 36, Issue 2 (2015), pp. 417–434.
DOI: [10.1137/140968914](https://doi.org/10.1137/140968914).
(<https://epubs.siam.org/doi/10.1137/140968914>)
- [J_{IMP}6] I. HNĚTYNKOVÁ AND M. PLEŠINGER: *Complex wedge-shaped matrices: A generalization of Jacobi matrices*, LAA, Linear Algebra and its Applications, Volume 487 (2015), pp. 203–219.
DOI: [10.1016/j.laa.2015.09.017](https://doi.org/10.1016/j.laa.2015.09.017).
(<https://www.sciencedirect.com/science/article/pii/S0024379515005327>)
- [J_{IMP}7] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND D. M. SIMA: *Solvability of the core problem with multiple right-hand sides in the TLS sense*, SIMAX, SIAM J. on Matrix Analysis and Applications, Volume 37, Issue 3 (2016), pp. 861–876.
DOI: [10.1137/15M1028339](https://doi.org/10.1137/15M1028339).
(<https://epubs.siam.org/doi/10.1137/15M1028339>)
- [J_{IMP}8] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND J. ŽÁKOVÁ: *Filter factors of truncated TLS regularization with multiple observations*, Applications of Mathematics, Volume 62, Issue 2 (2017), pp. 105–120.
DOI: [10.21136/AM.2017.0228-16](https://doi.org/10.21136/AM.2017.0228-16).
(<https://link.springer.com/article/10.21136/AM.2017.0228-16>)
- [J_{IMP}9] I. HNĚTYNKOVÁ, M. KUBÍNOVÁ, AND M. PLEŠINGER: *Noise representation in residuals of LSQR, LSMR, and CRAIG regularization*, LAA, Linear Algebra and its Applications, Volume 533 (2017), pp. 357–379.
DOI: [10.1016/j.laa.2017.07.031](https://doi.org/10.1016/j.laa.2017.07.031).
(<https://www.sciencedirect.com/science/article/pii/S0024379517304512>)
- [J_{IMP}10] M. PLEŠINGER AND I. PULTAROVÁ: *On the extreme eigenvalues of certain matrices of non-standard inner products of Hermite polynomials*, LAA, Linear Algebra and its Applications, Volume 546 (2018), pp. 50–66.
DOI: [10.1016/j.laa.2018.02.003](https://doi.org/10.1016/j.laa.2018.02.003).
(<https://www.sciencedirect.com/science/article/pii/S0024379518300582>)
- [J_{IMP}11] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND J. ŽÁKOVÁ: *TLS formulation and core reduction for problems with structured right-hand sides*, LAA, Linear Algebra and its Applications, Volume 555 (2018), pp. 241–265.
DOI: [10.1016/j.laa.2018.06.016](https://doi.org/10.1016/j.laa.2018.06.016).
(<https://www.sciencedirect.com/science/article/pii/S0024379518303008>)
- [J_{IMP}12] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND J. ŽÁKOVÁ: *Solvability classes for core problems in matrix total least squares minimization*, Applications of Mathematics, Volume 64, Issue 2 (2019), pp. 103–128.
DOI: [10.21136/AM.2019.0252-18](https://doi.org/10.21136/AM.2019.0252-18).
(<https://link.springer.com/article/10.21136/AM.2019.0252-18>)

SELECTED PROCEEDINGS CONTRIBUTIONS AND OTHER PAPERS

- [P1] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Lanczos tridiagonalization, Golub–Kahan bidiagonalization and core problem*, PAMM · Proceedings in Applied Mathematics and Mechanics, Volume 6, Issue 1 (2006), pp. 717–718.
DOI: [10.1002/pamm.200610339](https://doi.org/10.1002/pamm.200610339).
(<https://onlinelibrary.wiley.com/doi/10.1002/pamm.200610339>)
- [P2] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *On solution of total least squares problem with multiple right-hand sides*, PAMM · Proceedings in Applied Mathematics and Mechanics, Volume 8, Issue 1 (2008), pp. 10815–10816.
DOI: [10.1002/pamm.200810815](https://doi.org/10.1002/pamm.200810815).
(<https://onlinelibrary.wiley.com/doi/10.1002/pamm.200810815>)
- [P3] I. HNĚTYNKOVÁ, M. KUBÍNOVÁ, AND M. PLEŠINGER: *Notes on performance of bidiagonalization-based noise level estimator in image deblurring*, In proceedings of Algoritmy 2016 conference. Editor A. Handlovičová, Slovak University of Technology in Bratislava, Publishing House of STU, 2016,

pp. 333–342.

(<http://www.iam.fmph.uniba.sk/amuc/ojs/index.php/algoritmy/article/view/422>)

- [P4] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND J. ŽÁKOVÁ: *Modification of TLS algorithm for solving \mathcal{F}_2 linear data fitting problems*, PAMM · Proceedings in Applied Mathematics and Mechanics, Volume 17, Issue 1 (2017), pp. 749–750.
DOI: 10.1002/pamm.201710342.
(<https://onlinelibrary.wiley.com/doi/10.1002/pamm.201710342>)
- [P5] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND J. ŽÁKOVÁ: *Towards tensor generalizations of TLS & core problem theory*, PAMM · Proceedings in Applied Mathematics and Mechanics, Volume 18, Issue 1 (2018), Article e201800196, 2 pages.
DOI: 10.1002/pamm.201800196.
(<https://onlinelibrary.wiley.com/doi/10.1002/pamm.201800196>)

OTHER PROCEEDINGS CONTRIBUTIONS

- [P_{OTH}1] M. PLEŠINGER AND Z. STRAKOŠ: *Core reduction within the least squares problems* (in Czech), Proceedings of X. PhD. Conference '05 (F. Hakl, Ed.), Praha, ICS, AS CR & Matfyzpress (2005), pp. 102–108. (<http://www.cs.cas.cz/hakl/doktorandsky-den/files/2005/dk05proc.pdf>)
- [P_{OTH}2] M. PLEŠINGER AND Z. STRAKOŠ: *Singular Value Decomposition, Application in Image Deblurring* (in Czech), Seminar on Numerical Analysis '06, Praha, ICS, AS CR (2006), pp. 78–81.
- [P_{OTH}3] M. PLEŠINGER AND Z. STRAKOŠ: *Some remarks on bidiagonalization and its implementation*, Proceedings of XI. PhD. Conference '06 (F. Hakl, Ed.), Praha, ICS, AS CR & Matfyzpress (2006), pp. 104–114. (<http://www.cs.cas.cz/hakl/doktorandsky-den/files/2006/dk06proc.pdf>)
- [P_{OTH}4] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Golub–Kahan iterative bidiagonalization and stopping criteria in ill-posed problems*, In: Seminar on Numerical Analysis '07 (R. Blaheta, J. Starý, Eds.), Ostrava, Institute of Geonics, AS CR (2007), pp. 43–45.
- [P_{OTH}5] I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, AND Z. STRAKOŠ: *Total least squares problem in linear algebraic systems with multiple right-hand side*, In: Seminar on Numerical Analysis '07 (R. Blaheta, J. Starý, Eds.), Ostrava, Institute of Geonics, AS CR (2007), pp. 81–84.
- [P_{OTH}6] M. PLEŠINGER AND Z. STRAKOŠ: *Total least squares problem with multiple right-hand sides* (in Czech), Proc. of XII. PhD. Conference '07 (F. Hakl, Ed.), Praha, ICS, AS CR & Matfyzpress (2007), pp. 70–74.
(<http://www.cs.cas.cz/hakl/doktorandsky-den/files/2007/sbornik-dd-2007.pdf>)
- [P_{OTH}7] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *On the Golub–Kahan iterative bidiagonalization and revealing the size of the noise in a data*, In: Seminar on Numerical Analysis '09 (R. Blaheta, J. Starý, Eds.), Ostrava, Institute of Geonics, AS CR (2009), p. 45 (abstract only).
- [P_{OTH}8] I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *The core problem within a linear approximation problem with multiple right-hand sides*, In: Seminar on Numerical Analysis '14 (H. Bílková, M. Rozložník, P. Tichý, Eds.), Nymburk, Institute of Computer Science, AS CR (2014), pp. 44–45 (abstract only).



EDITORIAL WORK

- [E1] M. HOKR, M. PLEŠINGER, AND J. ŠEMBERA (Editors): *SiMoNA 2009, Simulation, Modelling, and Miscellaneous Applications* (in Czech, partially in English and Slovak; *Simulace, modelování a nejrůznější aplikace*) TU Liberec, 2009, 196 pages. ISBN 978-80-7372-543-3. Proceedings of SiMoNA 2009 workshop.
(http://www.fp.tul.cz/~plesinger/my_publications/SIMONA_2009_Proceedings.pdf)



TALKS AND OTHER PRESENTATIONS

INVITED LECTURES & TUTORIALS

- [IL1] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *The regularizing effect of the Golub–Kahan iterative bidiagonalization and revealing the noise in the data*, BIT50 – Trends in Numerical Computing, Lund, Sweden, June 17–20, 2010. Lecture presented by I. Hnětynková.
INVITED lecture at the minisymposium “Inverse Problems” organized by P. C. Hansen.
- [IL2] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Ill-posed inverse problems in image processing: Introduction, structured matrices, spectral filtering, regularization, noise revealing*. Three plenary lectures, one presented by I. Hnětynková.
INVITED tutorial at “Winter School in High-Performance and Parallel Computers, Programming Technologies, and Numerical Linear Algebra” (at SNA ’11), Rožnov pod Radhoštěm, 2011.
- [IL3] I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *The total least squares problem with multiple right-hand sides $AX \approx B$* , Programs and Algorithms in Numerical Mathematics, PANM 16, Dolní Maxov, June 3–8, 2012.
INVITED plenary lecture at PANM 16 conference.
- [IL4] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Inverse ill-posed problems in image processing: Image deblurring*.
INVITED lecture at “Schola Ludus & Summer School” (Summer School in Physical Biology and Biotechnology), Academic and University Center Nové Hradky & University of South Bohemia, July 1–28, 2012.
- [IL5] M. PLEŠINGER: *On the way from matrix to tensor computations: Introduction, basic arithmetics, tensor decompositions, hierarchical formats, and tensor networks*. Two plenary lectures.
INVITED tutorial at “Winter School on Methods of Numerical Mathematics and Modelling, High-Performance Computing, and Numerical Linear Algebra” (at SNA ’19), Ostrava, 2011.

INTERNATIONAL CONFERENCES (TALKS AND POSTERS)

- [I1] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Lanczos tridiagonalization and the core problem*, 77th GAMM Annual Meeting, Technische Universität Berlin, Germany, March 27–31, 2006.
- [I2] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Golub–Kahan bidiagonalization and stopping criteria in solving ill-posed problems*, Joint GAMM–SIAM Conf. on Applied Linear Algebra, Düsseldorf, Germany, July 24–27, 2006.
- [I3] Poster: I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *On core problem formulation in linear approximation problems with multiple right-hand sides*, 4th Int. Workshop on Total Least Squares and Errors-in-Variables Modeling, Arenberg castle, Leuven, Belgium, August 21–23, 2006.
- [I4] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Analysis of the TLS problem with multiple right-hand sides*, 22nd Biennial Conference on Numerical Analysis, University of Dundee, Scotland, UK, June 26–29, 2007.
- [I5] Poster: I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *On total least squares formulation in linear approximation problems with multiple right-hand sides*, Computational Methods with Applications, Harrachov, Czech Republic, August 19–25, 2007.
- [I6] I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *On total least squares problem with multiple right-hand sides*, IMA Conference on Numerical Linear Algebra and Optimisation, University of Birmingham, UK, September 13–15, 2007.
- [I7] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *On fundamentals of total least squares problems*, 13th Czech–French–German Conference on Optimization Heidelberg, Germany, September 17–21, 2007.
- [I8] Poster: I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *On total least squares formulation in linear approximation problems with multiple right-hand sides*, Algoritmy 2009, Vysoké Tatry–Podbanské, Slovakia, March 15–20, 2009.

- [I9] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *The total least squares problem and reduction of data*, Modelling 2009, The 4th IMACS Conference on Mathematical Modelling and Computational Methods in Applied Sciences and Engineering, Rožnov pod Radhoštěm, Czech Republic, June 22–26, 2009.
- [I10] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *The total least squares problem and reduction of data*, Enumath 2009–The 8th European Conference on Numerical Mathematics and Advanced Applications, Uppsala, Sweden, June 29–July 3, 2009.
- [I11] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *The regularizing effect of the Golub–Kahan iterative bidiagonalization and revealing the noise in the data*, BIT50–Trends in Numerical Computing, Lund, Sweden, June 17–20, 2010. Lecture presented by I. Hnětynková.
INVITED lecture at the minisymposium “Inverse Problems” organized by P. C. Hansen.
- [I12] Poster: I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *The total least squares with multiple right-hand sides*, **Householder Symposium XVIII**, Tahoe City, California, June 12–17, 2011.
- [I13] D. KRESSNER, M. PLEŠINGER, C. TOBLER: *Preconditioned low-rank Krylov subspace methods for parameter-dependent Lyapunov equations*, ILAS 2011 conference on “Pure and applied linear algebra: The new generation”, Braunschweig, Germany, August 22–26, 2011.
- [I14] Poster: I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *The total least squares with multiple right-hand sides*, HPCSE 2013, High Performance Computing in Science and Engineering, Soláň, Czechia, May 27–30, 2013.
- [I15] Poster: I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *The total least squares with multiple right-hand sides*, PIM 2013, Preconditioning of Iterative Methods, Prague, Czechia, July 1–5, 2013.
- [I16] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *On the fundamentals of the total least squares problems*, EUCO 2013, European Conference on Computational Optimization, Chemnitz, Germany, July 17–19, 2013.
- [I17] I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA: *The core problem within a linear approximation problem with multiple right-hand sides*, **Householder Symposium XIX**, Spa, Belgium, June 8–13, 2014.

LOCAL CONFERENCES (TALKS AND POSTERS)

- [L1] M. PLEŠINGER: *Two topics from theory of linear approximation problems*, XI. PhD. Conference, Moníec–Sedlec–Prčice, September 18–20, 2006.
AWARDED the Prize of Institute of Computer Science, AS CR for the best lecture (2006).
- [L2] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Golub–Kahan iterative bidiagonalization and stopping criteria in ill-posed problems*, SNA '07, Seminar on Numerical Analysis, Ostrava, January 22–26, 2007.
- [L3] I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, AND Z. STRAKOŠ: *Total least squares problem in linear algebraic systems with multiple right-hand side*, SNA '07, Seminar on Numerical Analysis, Ostrava, January 22–26, 2007.
- [L4] Poster: I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *On total least squares formulation in linear approximation problems with multiple right-hand sides*, SNA '08, Seminar on Numerical Analysis, Liberec, January 28–February 1, 2008.
- [L5] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Golub–Kahan bidiagonalization and revealing the noise level in data*, SNA '09, Seminar on Numerical Analysis, Ostrava, February 2–6, 2009.
- [L6] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Ill-Posed Problems in Image Processing. Image Deblurring*: Seminář: Matematika a statistika na VŠ (with the special occasion of 50th birthday of M. Brzezina), Liberec, November 25, 2011.
- [L7] D. KRESSNER, M. PLEŠINGER, C. TOBLER: *Preconditioned low-rank Krylov subspace methods for parameter-dependent Lyapunov equations*, SNA '12, Seminar on Numerical Analysis, Liberec, January 23–27, 2012.

- [L8] I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *The total least squares problem with multiple right-hand sides $AX \approx B$* , PANM 16, Programs and Algorithms in Numerical Mathematics, Dolní Maxov, June 3–8, 2012.
INVITED plenary lecture.
- [L9] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Ill-posed inverse problems in image processing: Image deblurring*, International Conference on Presentation of Mathematics, ICPM '12, Liberec, June 21–22, 2012.
- [L10] Poster: I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA, Z. STRAKOŠ, AND S. VAN HUFFEL: *The core problem within a linear approximation problem with multiple right-hand sides*, SNA '14, Seminar on Numerical Analysis, Nymburk, January 27–31, 2014.
- [L11] I. HNĚTYNKOVÁ, M. PLEŠINGER, D. M. SIMA: *The core problem within a linear approximation problem with multiple right-hand sides*, International Conference on Presentation of Mathematics, ICPM '14, Liberec, September 25–26, 2014.

SEMINAR LECTURES

- [S1] M. PLEŠINGER: *Singular value decomposition, application in image deblurring*, Seminar at Faculty of Mechatronics, TU Liberec, December 14, 2005.
- [S2] M. PLEŠINGER: *Core reduction and least squares problems $Ax \approx b$* , Seminar at Faculty of Mechatronics, TU Liberec, December 21, 2005.
- [S3] M. PLEŠINGER: *Core problem, Golub–Kahan bidiagonalization, Lanczos tridiagonalization*, Seminar at Department of Modelling of Processes, FM, TU Liberec, April 13, 2006.
- [S4] M. PLEŠINGER: *Two topics from theory of linear approximation problems*, Seminar at Faculty of Mechatronics, TU Liberec, November 1, 2006.
- [S5] M. PLEŠINGER: *Reduction of data in $AX \approx B$* , Seminar at Institute of Computer Science, AS CR, November 14, 2006.
- [S6] M. PLEŠINGER: *Solving total least squares problems with multiple right-hand sides*, Seminar at Institute of Novel Technologies and Applied Informatics, FM, TUL, February 27, 2007.
- [S7] M. PLEŠINGER: *Solving total least squares problems with multiple right-hand sides*, Seminar at Institute of Computer Science, AS CR, March 13, 2007.
- [S8] M. PLEŠINGER: *The total least squares problem and the core problem theory*, Group seminar of the research group of D. Kressner, SAM, ETHZ, December 9, 2010.
- [S9] M. PLEŠINGER, I. HNĚTYNKOVÁ: *Ill-posed inverse problems in image processing* (two lectures), Colloquia of Dept. of Mathematics, West Bohemia University (KMA, FAV, ZČU), Pilsen, April 7 and 14, 2011.
- [S10] M. PLEŠINGER: *The total least squares problem*, Seminar at Dept. of Mathematics and Didactics of Mathematics (KMD), FP, TU Liberec, October 17, 2011.
- [S11] I. HNĚTYNKOVÁ, M. PLEŠINGER, AND Z. STRAKOŠ: *Inverse ill-posed problems in image processing: Image deblurring*, “Schola Ludus & Summer School” (Summer School in Physical Biology and Biotechnology), Academic and University Center Nové Hrady, July 25, 2012.
INVITED lecture.
- [S12] M. PLEŠINGER: *Inverzní úlohy ve zpracování obrazu: Problém “Image deblurring” (s praktickými ukázkami)*, public lecture devoted to 150th anniversary of JČMF, TU Liberec, December 3, 2012.
<http://jcmf.cz/node/432>
- [S13] M. PLEŠINGER: *Jacobi (tridiagonal) matrices: Their properties and one possible generalization*, Seminar at Dept. of Mathematics and Didactics of Mathematics (KMD), FP, TU Liberec, April 13, 2015.



AWARDS

- 2006: The lecture [L1] awarded the Prize of Institute of Computer Science, AS CR for the best lecture.
- 2008: Ph.D. thesis [T3] awarded the Jiří Zelenka Prize of Technical University of Liberec for the excellent doctoral thesis.
- 2013: The book [B1] awarded the Jaroslav Jirsa Prize of Charles University in Prague for the best textbook of the year 2012, in the category Natural Science, Mathematics, and Physics.



REFERENCES

- Doc. MIROSLAV BRZEZINA, Faculty of Education, Technical University of Liberec, Liberec, Czechia (miroslav.brzezina@tul.cz).
- Prof. PER CHRISTIAN HANSEN, Institut for Informatik og Matematisk Modellering, Danmarks Tekniske Universitet, Lynby, Denmark (pcha@dtu.dk).
- Prof. DANIEL KRESSNER, Mathematics Institute of Computational Science and Engineering MATH-ICSE, EPFL, Lausanne, Switzerland (daniel.kressner@epfl.ch).
- Dr. EFFROSYNI KOKIOPOULOU, Google research center, Zürich, Switzerland (<https://research.google.com/pubs/EffrosyniKokiopoulou.html>).
- Prof. JIŘÍ MARYŠKA, Faculty of Mechatronics, Technical University of Liberec, Liberec, Czechia (jiri.maryska@tul.cz).
- Prof. JAN PICEK, Faculty of Education, Technical University of Liberec, Liberec, Czechia (jan.picek@tul.cz).
- Doc. IVANA PULTAROVÁ, Faculty of Civil Engineering, Czech Technical University, Czechia (ivana.pultarova@cvut.cz).
- Doc. MIROSLAV ROZLOŽNÍK, Institute of Computer Science AS CR & Institute of Mathematics AS CR, Prague, Czechia (miro@cs.cas.cz, rozloznik@math.cas.cz).
- Dr. DIANA MARIA SIMA, Departement Elektrotechniek–ESAT, Katholieke Universiteit Leuven, Leuven, Belgium (diana.sima@esat.kuleuven.be).
- Prof. ZDENĚK STRAKOŠ, Faculty of Mathematics and Physics, Charles University, Prague, Czechia (strakos@karlin.mff.cuni.cz).
- Prof. MIROSLAV TŮMA, Institute of Computer Science AS CR, Prague, Czechia (tuma@cs.cas.cz).



Liberec, Czechia, April 13, 2019

Martin Plešinger