Curriculum Vitae
Raf Vandebril

Name:	Raf Vandebril
Address (Office) ✉:	Katholieke Universiteit Leuven (K.U.Leuven) Dept. Computerwetenschappen (Postbus: 02402) Celestijnenlaan 200A 3001 Heverlee (Leuven) Belgium
Phone (Office) ☎:	+32 (0)16 32 76 30
Fax 🖷:	+32 (0)16 32 79 96
Email :	raf.vandebril@cs.kuleuven.be
Homepage :	`http://www.cs.kuleuven.be/~raf/`

1. Personal/Academic Information

The next pages contain consecutively

- Positions
- Education
- Grants
- Project Proposals
- Foreign stays
- Refereeing
- Acknowledgements

Positions

- **From 2009:** Tenure-Track position (docent) K.U.Leuven, Belgium.
- **2008-2010:** Position as Guest Professor (10%) at the UHasselt, Belgium, (contract renewed).
- **2008-2011:** F.W.O-Vlaanderen Post.-Doc., K.U.Leuven, Belgium (supervisor Prof. Dr. ir. Marc Van Barel, contract renewed).
- **2006-2008:** Position as Guest Professor (10%) at the UHasselt, Belgium.
- **2005-2008:** F.W.O-Vlaanderen Post.-Doc., K.U.Leuven, Belgium (supervisor Prof. Dr. ir. Marc Van Barel).
- **2004-2005:** B.A.P Post.-Doc., K.U.Leuven, Belgium (supervisor Prof. Dr. ir. Marc Van Barel).
- **2000-2004:** Doctoraatsbursaal, K.U.Leuven, Belgium (supervisor Prof. Dr. ir. Marc Van Barel).

Education

- **2000-2004:** Dr. in Applied Mathematics: Computer Science, K.U.Leuven, Belgium, obtained 26th of May, 2004. PhD thesis: Semiseparable matrices and the symmetric eigenvalue problem.
  The Jury: Prof. Dr. ir. J. Berlamont, voorzitter
  Prof. Dr. ir. M. Van Barel, promotor
  Prof. Dr. D. A. Bini (Università di Pisa)
  Prof. Dr. A. Bultheel
  Prof. G. H. Golub (Stanford University)
  Prof. Dr. ir. A. Haegemans
  Dr. N. Mastronardi (IAC-CNR, Bari)
  Prof. Dr. ir. S. Van Huffel
  `http://www.kuleuven.be`
  `http://www.cs.kuleuven.be`
  `http://www.cs.kuleuven.be/~raf/homepage/publications/phd.php`
- **1998-2000:** "Licentiaat Wiskunde, zuivere wiskunde" (Master in pure Mathematics), K.U.Leuven, Belgium, June 2000.
  Thesis: "L^p ruimten geassocieerd aan von Neumann-algebras", (L^p spaces associated to von Neumann-algebras) at the Department of Mathematics,
  Advisor: Prof. Dr. Johan Quaegebeur.
  `http://www.kuleuven.be`
- **1996-1998:** "Kandidaat Wiskunde", L.U.C. Diepenbeek (nowadays Universiteit Hasselt: UHasselt), Belgium, July 1998.
  `http://www.uhasselt.be`

Grants

- **2008-2009:** Grant by the FWO-Flanders (Rijsel - November/Juni - 2008/2009), for a research stay at the university of Lille, France, in cooperation with Prof. Dr. Bernhard Beckermann.
- **2008-2011:** FWO-Flanders Post-Doc grant.
- **2006:** Grant by the FWO-Flanders (Stanford - Mei - 2006), for a visit to Stanford University, California, USA, in cooperation with Prof. Dr. Gene Golub.
- **2005-2008:** FWO-Flanders Post-Doc grant, 2005-2008.
- **2004:**Grant by the FWO-Flanders (Stanford - Oktober/November - 2004), for a visit to Stanford University, California, USA, in cooperation with Prof. Dr. Gene Golub.
- **2001:** Grant by the Tournesol project for a visit to INRIA, Sophia Antipolis, France, in cooperation with Prof. Dr. Bernard Mourrain.

Project Proposals

- OT (OT/05/40, Research Fund KULeuven) "Large rank structured matrix computations", project proposal written in cooperation with Prof. Dr. ir. Marc Van Barel.

Research stays (completed & planned)

(1) **2008-2009:** Research stay at **University of Science & Technology Lille**, Lille, France. Cooperation with Prof. Dr. Bernhard Beckermann. From October 27, 2008 until July 30, 2009. Grant by the FWO-Flanders (Rijsel - November/Juni - 2008/2009)

Results from this visit: (1 talk and 3 papers)

- Vandebril R., *Structured rank matrices and eigenvalue problems*, Séminaire: Analyse numérique - Equations aux dérivées partielles, January 8, 2009.
  `http://math.univ-lille1.fr/seminaire/affiche.php?action=infos\&sem=13\&id=1739\&prov=affiche\&temps=archives`
- Vandebril R., *A unitary similarity transform of a normal matrix to complex symmetric form*, revised version submitted for publication 2009. (pag. 6)
- Vandebril R. and Del Corso G. M. *An implicit multishift QR-algorithm for Hermitian plus low rank matrices*, revised version submitted for publication (internal report: TR09-06), 2009. (pag. 32)
  `http://compass2.di.unipi.it/TR/`
- Beckermann B., Güttel S. and Vandebril R. *On the asymptotic convergence of rational Ritz-values*, revised version submitted for publication, 2009. (pag. 37)

(2) **2008:** Research stay at the **CNR: Institute For Applied Mathematics Bari**, Bari, Italy. Cooperation with Dr. Nicola Mastronardi. From August 1, 2008 until September 21, 2008.

Results from this visit: (organization of the summerschool and 1 paper)

- *NLA International School 2008*: Linear System Theory, Control and Matrix Computations International school, September 7-12, 2008, Porto Giardino, Monopoli, Bari, Italy.
  `http://www.cs.kuleuven.be/~raf/bari2008/`
- Mastronardi N., Van Barel M. and Vandebril R., *On the computation of the nullspace of Toeplitz–like matrices*, accepted for publication in Electronic Transactions on Numerical Algorithms (internal report: TW516), april 2009. (pag. 12)

(3) **2006:** A visit to **Stanford University**, California, USA. Cooperation with Prof. Dr. Gene Golub. From May 10, 2006 until May 30, 2006. Grant by the FWO-Flanders (Stanford - Mei 2006).

Results from this visit: (3 talks and 1 paper)

- Vandebril R., Golub G. and Van Barel M., *On solving the definite generalized tridiagonal eigenvalue problem.* accepted for publication in SIAM Journal on Matrix Analysis and Applications, 2006. (pag. 14)

- Vandebril R., *The nullity theorem and some examples*, Stanford University, May 15, 2006, Stanford, California, USA.
- Vandebril R., *A QR-decomposition for quasiseparable matrices*, Stanford University, May 19, 2006, Stanford, California, USA.
- Vandebril R., Van Barel M., Mastronardi N., *A general Levinson framework for solving systems of equations*, Stanford University, May 25, 2006, Stanford, California, USA.
  `http://sccm.stanford.edu/seminar-s2006/index.htm`

(4) **2004:** A visit to **Stanford University**, California, USA. Cooperation with prof. dr. Gene Golub, From October 17, 2004 until November 20, 2004. Grant by the FWO-Flanders (Stanford - Oktober/November - 2004).

Results from this visit: (2 talks and 2 papers)

- Vandebril R., Van Barel M., Mastronardi N. and Van Camp E., *About the convergence properties of the reductions to semiseparable (plus diagonal) form*, Stanford University, Nov 15, 2004, Stanford, California, USA.
  `http://sccm.stanford.edu/seminar-f2004/index.htm`
- Vandebril R., Van Barel M., Mastronardi N. and Van Camp E., *About the convergence properties of the reductions to semiseparable (plus diagonal) form*, UC Berkeley, Oct 20, 2004, Berkeley, California, USA.
  `http://math.berkeley.edu/calendar-event304.html`
- R. Vandebril, M. Van Barel, G. Golub, and N. Mastronardi, *A bibliography on semiseparable matrices*, Calcolo, 42(3-4):249-270.
- Vandebril R., Golub G. and Van Barel, M., *A small note on the scaling of positive definite semiseparable matrices*, Numerical Algorithms, 41:319-326, 2006.

(5) **2001:** A visit to the **research institute INRIA**, 2004 Route des lucioles B.P. 93, Sophia Antipolis, France. Cooperation with Galaad, the research group of Prof. Dr. Bernard Mourrain. From October 15, 2001 until November 14, 2001. Grant by the Tournesol project.

Results from this visit: (1 talk and 1 paper)

- R. Vandebril, M. Van Barel, O. Ruatta, and B. Mourrain, *A new algorithm for solving multivariate polynomial problems by means of interpolation*, Department of Computer Science, K.U.Leuven, Report TW 343, Leuven, Belgium, July, 2002.
- Vandebril R., Van Barel M., Ruatta O. and Mourrain B., *A new approach to the multivariate interpolation problem*, INRIA research institute, November 2001, Sophia Antipolis, France.

Refereeing

I am a referee for the following international journals/organizations.

- AMS;
- Applied Mathematics Letters;
- Eurasip;
- IEEE Signal processing letters;
- Journal of Computational and Applied Mathematics;
- Journal of Business and Economic Statistics;
- Journal of Applied Mathematics;
- Linear Algebra and its Applications;
- Mathematics of Computation;
- Numerical Linear Algebra with Applications;
- SIAM Journal on Matrix Analysis and its Applications;
- Signal Processing.

Acknowledgements
The book: "Matrix Computations & Semiseparable Matrices: Volume I: Linear Systems" appeared in the top 20 (position 16) of "Bestsellers in Mathematics".
http://www.libraryjournal.com/info/CA6554754.html

2. Education

The next pages contain consecutively

- Exercises
- Courses at Bachelor or Master level
- Courses at PhD level
- Courses attended

Exercices given

- **2000-2008:** Exercises of "Lineaire Algebra", a course of Prof. Dr. A. Bultheel, given to the first bachelor "Architect burgerlijk ingenieur" at the K.U.Leuven, Belgium.
- **2000-2008:** Exercices of "Wiskundige Analyse", a course of Prof. Dr. A. Bultheel, given to the first bachelor "Architect burgerlijk ingenieur" at the K.U.Leuven, Belgium.

Courses taught at Bachelor or Master level

- **2009-...** "P&O Computer Science, (H01Q3A)", bachelor in Engineering.
  `http://www.kuleuven.be/onderwijs/aanbod/syllabi/H01Q3AN.htm`
- **2009-...** "Integrated Practicum (H9XA4A)" , bachelor in Engineering.
  `http://www.kuleuven.be/onderwijs/aanbod/syllabi/H9XA4AN.htm`
- **2009-...** "Numerical Linear Algebra (H03G1A)", master in Engineering.
  `http://www.kuleuven.be/onderwijs/aanbod/syllabi/H03G1AN.htm`
- **2006-...:** "Numerical Techniques en Optimization (dutch: Numerieke technieken en optimalisatie) (163)", third bachelor "Mathematics" at the UHasselt, Belgium.
  `http://www.uhasselt.be/stgids/default.aspx?n=4&a=2007&i=1632`
- **2005-2006:** "Lineaire algebra" as replacement of Prof. Dr. A. Bultheel, given to the first bachelor "Architect burgerlijk ingenieur" at the K.U.Leuven, Belgium.

Courses taught at PhD level:

(1) "*Summer school in Monopoli*"; Numerical linear algebra and its applications, summer school, XXII School, September 12-18, 2004, Porto Giardino, Monopoli, Bari, Italy.
`http://www.cs.kuleuven.ac.be/$\sim$mase/Bari2004/` Course of 5 lectures of one hour, together with Prof. Dr. ir. Marc Van Barel.

Courses attended:

(1) "*Summer School in Monopoli*"; Linear System Theory, Control and Matrix Computations, International School, September 7-12, 2008, Hotel porto Giardino, Monopoli, Bari, Italy.
`http://www.cs.kuleuven.ac.be/~raf/bari2008/`
(2) "*Numerical Optimization*"; Fall, 2006, K.U.Leuven, Belgium. Taught by Moritz Diehl.
(3) "*Seminar Series on Iterative Methods for Large Scale Problems.*"; April-May, 2005, 5 Lectures of 3.5h, Leuven & Louvain-La-Neuve, Belgium.
`http://www.inma.ucl.ac.be/~vdooren/Iterative.html`
(4) "*Summer School in Monopoli*"; Numerical Linear Algebra and its Applications, Summer School, September 12-18, 2004, Porto Giardino, Monopoli, Bari, Italy.
`http://www.cs.kuleuven.ac.be/~mase/Bari2004/`
(5) "*Summer School in Monopoli*"; Numerical Linear Algebra and its Applications, Summer School, September 15-20, 2003, Porto Giardino, Monopoli, Bari, Italy.
`http://www.cs.kuleuven.ac.be/~mase/Bari/`
(6) "*Academic English*"; 2001-2002, K.U.Leuven, Belgium. Taught by C. Greenman.
(7) "*High Performance Computing*"; Graduate School in Computational Mechanics, 2001, K.U.Leuven, Belgium. Taught by Prof. Dr. ir. D. Roose.
(8) "*Numerical Linear Algebra*"; Graduate School in Computational Mechanics, Iterative Methods, 2000, ULB, Belgium. Taught by Prof. Dr. R. Beauwens.

3. Academic files: Conferences/talks

The next pages contain consecutively

- Organization of meetings and conferences
- Invited talks and conferences
- International meetings and conferences attended
- National meetings and conferences attended
- Talks
  - presented for an international audience
  - other talks
- Posters presented

Organization of meetings and conferences

I contributed in the organization of the following events.

(1) *Dysco Study day 2009*: DYSCO (Dynamical Systems, Control, and Optimization), K.U.Leuven, November 27, 2009, Leuven, Belgium.
`http://www.cs.kuleuven.be/~raf/dysco`

(2) *NLA School 2008*: Linear System Theory, Control and Matrix Computations, International School, September 7-12, 2008, Hotel porto Giardino, Monopoli, Bari, Italy.
Organizing committee:
- Nicola Mastronardi, Istituto per le Applicazioni del Calcolo "M.Picone" sez. Bari, Bari, Italy.
- Dario Bini, Università di Pisa, Pisa, Italy.
- Stefano Serra Capizzano, Università dell'Insubria, Como, Italy.
- Raf Vandebril, Katholieke Universiteit Leuven, Leuven, Belgium.
- Paul Van Dooren, Department of Mathematical Engineering, Catholic University of Louvain, Louvain-La-Neuve, Belgium.

`http://www.cs.kuleuven.be/~raf/bari2008/`

(3) *NLA Workshop 2007*: Numerical Linear Algebra Internet and Large Scale Applications, International Workshop, September 9-14, 2007, Porto Giardino, Monopoli, Bari, Italy.
Organizing committee:
- Nicola Mastronardi, Istituto per le Applicazioni del Calcolo "M.Picone" sez. Bari, Bari, Italy.
- Dario Bini, Università di Pisa, Pisa, Italy.
- Stefano Serra Capizzano, Università dell'Insubria, Como, Italy.
- Raf Vandebril, Katholieke Universiteit Leuven, Leuven, Belgium.

`http://www.cs.kuleuven.be/~raf/bari2007/`

(4) *NLA Workshop 2006*: Numerical Linear Algebra in Signals and Systems, International Workshop, September 11-15, 2006, Porto Giardino, Monopoli, Bari, Italy.
Organizing committee:
- Nicola Mastronardi, Istituto per le Applicazioni del Calcolo "M.Picone" sez. Bari, Bari, Italy.
- Marc Van Barel, Katholieke Universiteit Leuven, Leuven, Belgium.
- Raf Vandebril, Katholieke Universiteit Leuven, Leuven, Belgium.

`http://www.cs.kuleuven.be/~raf/bari2006/`

Invitations for lectures and conferences (only by invitation) which I accepted.

(1) Conference by invitation.
Cortona 2008: Structured Linear Algebra Problems: Analysis, Algorithms and Applications September 15-19, 2008, Cortona, Italy.
`http://www.dm.unipi.it/~cortona08/`

(2) Conference by invitation.
Householder Symposium XVII 2008: Householder Meeting on Numerical Linear Algebra, June 1-6, 2008, Zeuthen, Germany.
http://www3.math.tu-berlin.de/householder_2008/
(3) Invited as speaker.
Vandebril R. and Golub G., *On the Ax equals λBx problem*, Gene Golub Around the World Commemoration, K.U.Leuven, February 29, 2008, Leuven, Belgium.
http://www.kuleuven.be/golub/
(4) Conference by invitation.
Householder Symposium 2005: Householder Meeting on Numerical Linear Algebra, May 23-27, 2005, Seven Springs Mountain Resort, Champion, Pennsylvania, USA.
http://www.cse.psu.edu/~hh2005/

International meetings and conferences that I attended/plan to attend:

2008

(1) *Cortona 2008*: Structured Linear Algebra Problems: Analysis, Algorithms and Applications September 15-19, 2008, Cortona, Italy.
http://www.dm.unipi.it/~cortona08/
(2) *NLA International School 2008*: Linear System Theory, Control and Matrix Computations International school, September 7-12, 2008, Porto Giardino, Monopoli, Bari, Italy.
http://www.cs.kuleuven.be/~raf/bari2008/
(3) *FOCM 2008*: Foundations of Computational Mathematics June 16-26, 2008, City University of Hong Kong, Hong Kong, China.
http://www.damtp.cam.ac.uk/user/na/FoCM/FoCM08/
(4) *Householder Symposium XVII 2008*: Householder Meeting on Numerical Linear Algebra, June 1-6, 2008, Zeuthen, Germany.
http://www3.math.tu-berlin.de/householder_2008/
(5) *Gene Golub Commemoration Day*: Gene Golub Around the World Commemoration, K.U.Leuven, February 29, 2008, Leuven, Belgium.
http://www.kuleuven.be/golub/

2007

(6) *Birth of Numerical Analysis*: Symposium: The birth of numerical analysis, K.U.Leuven, October 29-30, 2007, Leuven, Belgium.
http://www.cs.kuleuven.be/~ade/WWW/WOG/history/
(7) *M2A 2007*: Matrix Analysis and Applications, in honor of Gérard Meurant for his 60th birthday, October 15-19, 2007, CIRM Luminy, France.
http://www-lmpa.univ-littoral.fr/M2A07/pages/part.html
(8) *NLA workshop 2007*: Numerical Linear Algebra Internet and Large Scale Applications International workshop, September 9-14, 2007, Porto Giardino, Monopoli, Bari, Italy.
http://www.cs.kuleuven.be/~raf/bari2007/
(9) *Stanford 50 2007*: Stanford 50: State of the Art and Future Directions of Computational Mathematics and Numerical Computing, March 29 - 31, 2007, Stanford University, USA.
http://compmath50.stanford.edu/

2006

(10) *NLA Workshop 2006*: Numerical Linear Algebra in Signals and Systems International workshop, September 11-15, 2006, Porto Giardino, Monopoli, Bari, Italy.
http://www.cs.kuleuven.be/~raf/bari2006/
(11) *TLS Workshop 2006*: 4th International Workshop on Total Least Squares and Errors-in-Variables Modeling, August 21-23, 2006, Arenberg castle, Leuven, Belgium.
http://homes.esat.kuleuven.be/~imarkovs/workshop.html
(12) AMI 06: International Conference on Approximation and Iterative Methods, June 22-23, 2006, Lille, France.
http://math.univ-lille1.fr/~ami06/index.html

(13) *ILAS 2006*: Thirteenth ILAS conference, July 18-21, 2006, Amsterdam, Netherlands.
http://staff.science.uva.nl/~brandts/ILAS06/

(14) *ICCAM 2006*: Twelfth International Congress on Computational and Applied Mathematics, July 10 - 14, 2006, Katholieke Universiteit Leuven, Belgium.
http://www.iccam.ugent.be/

(15) *22nd GAMM-seminar 2006*: 22nd GAMM-seminar on Large Scale Eigenvalue Computations, January 19–21, 2006, Max-Planck-Institute for Mathematics in Sciences, Germany.
http://www.mis.mpg.de/scicomp/gamm22/

2005

(16) *IWOTA 2005*: The Sixteenth International Workshop on Operator Theory and Applications, July 24-27, 2005, University of Connecticut, Storrs, USA.
http://www.math.uconn.edu/~iwota/

(17) *Householder Symposium 2005*: Householder Meeting on Numerical Linear Algebra, May 23-27, 2005, Seven Springs Mountain Resort, Champion, Pennsylvania, USA.
http://www.cse.psu.edu/~hh2005/

2004

(18) *ICCAM 2004*: Eleventh International Congress on Computational and Applied Mathematics Katholieke Universiteit Leuven, Belgium July 26-30, 2004.
http://www.cs.kuleuven.ac.be/conference/iccam2004/iccam.htm

(19) *MTNS 2004*: Sixteenth International Symposium on Mathematical Theory of Networks and Systems, MTNS 2004, July 5-9, 2004, Leuven, Belgium.
http://www.mtns2004.be

(20) *IWASEP V*: V International Workshop on Accurate Solution of Eigenvalue Problems, IWASEP 5, June 28 - July 1, 2004, Arcadeon Conference Center; Hagen, Germany.
http://www.fernuni-hagen.de/MATHPHYS/iwasep5/

(21) *2ème Journée Approximation*: 2ème Journée Approximation, Mar 25, 2004, Equipe ANO-EDP Laboratoire Paul Painlev UMR 8524 Universit de Lille 1, France.

2003

(22) *NLA Workshop 2003*: Workshop on Numerical Linear Algebra, September 15-20, 2003, Porto Giardino, Monopoli, Bari, Italy.
http://www.cs.kuleuven.ac.be/~mase/Bari/

2002

(23) *GAMM Workshop 2002*: Gesellschaft für Angewandte Mathematik und Mechanik Workshop on Numerical Linear Algebra with special emphasis on Multilevel and Krylov Subspace Methods, September 13-14, 2002, Bielefeld, Germany.
http://www.mathematik.uni-bielefeld.de/~numerik/Gamm_2002.html

(24) *ICCAM 2002*: Tenth International Congress on Computational and Applied Mathematics, July 22-26, 2002, Leuven, Belgium.
http://www.cs.kuleuven.ac.be/conference/iccam2002/iccam.htm

(25) *Cadzand Workshop 2002*: Cadzand Workshop on Fast and Smart Algorithms, June 23-28, Cadzand, Netherlands.

2001

(26) *TLS Workshop 2001*: Third International Workshop on "TLS and Errors-in-Variables Modeling", August 27-29, 2001, Leuven, Belgium.
http://www.esat.kuleuven.ac.be/sista/tls3.html

(27) *SIAM Conference on Control and its Applications*: Fifth SIAM Conference on Control and its Applications, held jointly with the 2001 SIAM Annual Meeting, July 11-13, 2001, San Diego, California, United States.
http://www.siam.org/meetings/ct01/

(28) *SIAM Annual Meeting 2001*: SIAM Annual Meeting, held jointly with the SIAM Conference on Control and its Applications, July 9-13, 2001, San Diego, California, United States.
http://www.siam.org/meetings/an01/

(29) *NICONET Workshop 2001*: Third NICONET Workshop on Numerical Control Software, January 19, 2001, Louvain-la-Neuve, Belgium.
http://www.auto.ucl.ac.be/~vdooren/nicomeeting.html

2000

(30) *WOG/SRN Symposium*: "Geavanceerde Numerieke Methoden voor Wiskundige Modellering", Advanced Numerical Methods for Mathematical Modeling Symposium, New Trends in Mathematical Modeling and Numerical Methods, November 16-17, 2000 Leuven, Belgium.
http://www.cs.kuleuven.ac.be/~ade/WWW/WOG1996/conf2000/

National study days and workshops that I attended:

(1) *Dysco Study day 2008*: DYSCO (Dynamical Systems, Control, and Optimization), K.U.Leuven, April 14, 2008, Leuven, Belgium.
http://www.inma.ucl.ac.be/DYSCO/StudyDays/2008/April14.htm
(2) *IAP Study day 2007*: IAP Study Day, Kickoff meeting of the IAP network VI/4, April 16, 2007, K.U.Leuven, Belgium.
http://www.inma.ucl.ac.be/DYSCO/StudyDays/2007/April16.htm
(3) *IAP Study day 2006*: IAP Study Day, May 16, 2006, K.U.Leuven, Belgium.
http://www.inma.ucl.ac.be/DYSCO/StudyDays/2006/May16.htm
(4) *IAP Study day 2006*: IAP Study Day, October 24, 2006, K.U.Leuven, Belgium.
http://www.inma.ucl.ac.be/DYSCO/StudyDays/2006/October%2024.htm
(5) *Dag van de docent 2006*: Dag van de docent in de Associatie K.U.Leuven, October 26, 2006, K.U.Leuven, Belgium.
http://associatie.kuleuven.be/bezoeker/conf/dagdocent/
(6) *IAP Study day 2005*: IAP Study Day, May 19, 2005, Chateau de Colonster - ULg (Liége), Belgium.
http://www.auto.ucl.ac.be/IAPV/PAINEWS/2005/05_05.html
(7) *Study day IAP-Scores 2004*: IAP Study Day, Oct 12, 2004, Leuven, Belgium.
http://www.kuleuven.ac.be/scores/12-13oct2004.html
(8) *IAP Study day 2004*: IAP Study Day, June 1, 2004, Gent, Belgium.
http://www.auto.ucl.ac.be/IAPV/StudyDays/2004/June1.html
(9) *Grid Workshop*: BELNET Grid Computing workshop, October 29, 2003, Brussels, Belgium.
http://grid.belnet.be/workshop.htm
(10) *IAP Study day 2003*: Joint IAP Study Day and Doctor Honoris Causa Ceremony, March 14, 2003, Louvain-la-Neuve, Belgium.
http://www.auto.ucl.ac.be/IAPV/PAINEWS/2003/03_03.html
(11) *Ph.D.-Symposium 2002*: K.U.Leuven Faculty of Engineering PhD Symposium, December 11, 2002, Leuven, Belgium.
http://www.eng.kuleuven.ac.be/phd-symposium/2002/
(12) *IAP Study Day 2002*: IAP Study Day, November 26, 2002, Louvain-la-Neuve, Belgium.
http://www.auto.ucl.ac.be/IAPV/PAINEWS/2002/02_11.html
(13) *IAP Study day 2002*: IAP Study Day, May 15, 2002, Leuven, Belgium.
http://www.auto.ucl.ac.be/IAPV/PAINEWS/2002/02_04.html
(14) *IUAP/ICCoS Study Day 2000*: joint IUAP/ICCoS Study Day, December 5, 2000, Leuven, Belgium.
http://www.auto.ucl.ac.be/PAI02/news/00_12.html

Talks (The talks were given by the person whose name is underlined.):

Talks planned/given at international meetings and conferences:

2008

(1) Vandebril R., *On computing singular values of normal matrices*, Structured Linear Algebra Problems: Analysis, Algorithms and Applications, September 15-19, 2008, Cortona,

Italy.
http://www.dm.unipi.it/~cortona08/

(2) Mastronardi N., Van Barel M. and Vandebril R., *On computing the null space of polynomial matrices*, Structured Linear Algebra Problems: Analysis, Algorithms and Applications September 15-19, 2008, Cortona, Italy.
http://www.dm.unipi.it/~cortona08/

(3) Van Barel M., Vandebril R. and Van Dooren P., *A companion matrix eigenvalue solver*, Structured Linear Algebra Problems: Analysis, Algorithms and Applications September 15-19, 2008, Cortona, Italy.
http://www.dm.unipi.it/~cortona08/

(4) Mastronardi N., Laudadio T., Van barel M. and Vandebril R., *A new algorithm for computing the smallest eigenvalue of a symmetric positive definite Toeplitz matrix*, 13th International Congress on Computational and Applied Mathematics, July 7-11, 2008, Ghent, Belgium.
http://www.iccam.ugent.be/index.php

(5) Vandebril R., Van Barel M. and Golub G., *Structured rank matrices and the $Ax = \lambda Bx$ problem*, Foundations of Computational Mathematics June 16-26, 2008, City University of Hong Kong, Hong Kong, China.
http://www.damtp.cam.ac.uk/user/na/FoCM/FoCM08/

(6) Van Barel M., Vandebril R. et al., *Rank structured matrix operations*, Patrick Dewilde Workshop on Algebra, Networks, Signal Processing and System Theory, Wassenaar, June 21-25, 2008, Wassenaar, The Netherlands.
http://cobalt.et.tudelft.nl/workshop/

(7) Mastronardi N., Van barel M. and Vandebril R., *The generalized Schur algorithm for computing the nullspace of polynomial matrices*, Patrick Dewilde Workshop on Algebra, Networks, Signal Processing and System Theory, Wassenaar, June 21-25, 2008, Wassenaar, The Netherlands.
http://cobalt.et.tudelft.nl/workshop/

(8) Vandebril R., Van Barel M., and Mastronardi N., *Matrix structures and rational QR-iterations* Householder Meeting on Numerical Linear Algebra, June 1-6, 2008, Zeuthen, Germany.
http://www3.math.tu-berlin.de/householder_2008/

(9) Vandebril R., Van Barel M., and Mastronardi N., *A Generalization of the QR-algorithm for Semiseparable plus Diagonal Matrices*, Householder Meeting on Numerical Linear Algebra, June 1-6, 2008, Zeuthen, Germany.
http://www3.math.tu-berlin.de/householder_2008/

(10) Mastronardi N., Van barel M. and Vandebril R., *Computing the nullspace of block Toeplitz/Hankel matrices*, Householder Meeting on Numerical Linear Algebra, June 1-6, 2008, Zeuthen, Germany.
http://www3.math.tu-berlin.de/householder_2008/

(11) Vandebril R. and Golub G., *On the Ax equals λBx problem*, Gene Golub Around the World Commemoration, K.U.Leuven, February 29, 2008, Leuven, Belgium.
http://www.kuleuven.be/golub/

(12) Vandebril R., *Structured rank matrices and eigenvalue problems*, Kent State University, February 19, 2008, Kent, U.S.A.
http://www.math.kent.edu/math/Colloquium.cfm

2007

(13) Vandebril R., Van Barel M., and Mastronardi N., *A rational QR-iteration*, Matrix Analysis and Applications, October 15-19, 2007, CIRM Luminy, France.
http://www-lmpa.univ-littoral.fr/M2A07/

(14) Vandebril R., Van Barel M., and Mastronardi N., *A generalization of the QR-algorithm for semiseparable*, Matrix Analysis and Applications, October 15-19, 2007, CIRM Luminy, France.
http://www-lmpa.univ-littoral.fr/M2A07/

(15) Mastronardi N., Van Barel M., and Vandebril R., *A fast algorithm for computing the null space of some structured matrices*, Matrix Analysis and Applications, October 15-19, 2007, CIRM Luminy, France.
`http://www-lmpa.univ-littoral.fr/M2A07/`

(16) Vandebril R., Van Barel M., and Mastronardi N., *A rational QR-iteration*, Numerical Linear Algebra: Internet and Large Scale Applications, International Workshop, September 9-14, 2007, Porto Giardino, Monopoli, Bari, Italy.
`http://www.cs.kuleuven.be/~raf/bari2007/`

(17) Vandebril R., Van Barel M., and Mastronardi N., *A generalization of the QR-algorithm for semiseparable*, Numerical Linear Algebra: Internet and Large Scale Applications, International Workshop, September 9-14, 2007, Porto Giardino, Monopoli, Bari, Italy.
`http://www.cs.kuleuven.be/~raf/bari2007/`

(18) Van Barel M., Vandebril R., and Mastronardi N., *Comparison between the semiseparable and the tridiagonal eigenvalue solver* The numerical analysis and PDE seminar, Laboratoire Paul Painlevé Université Lille 1, France, May 31, 2007.

2006

(19) Vanberghen Y., Vandebril R. and Van Barel M., *The use of lower-semiseparable matrices to solved generalized eigenvalue problems*, Numerical Linear Algebra in Signals and Systems International workshop 2006, September 11-15, 2006, Hotel porto Giardino, Monopoli (Bari).
`http://www.cs.kuleuven.be/~raf/bari2006/`

(20) Mastronardi N., Diele F., Van Barel M. and Vandebril R., *A Schur-based algorithm to compute the smallest eigenvalue of symmetric positive definite Toeplitz matrices*, 13th ILAS conference, ILAS 2006, July 18-21, 2006, Amsterdam, Netherlands.
`http://staff.science.uva.nl/~brandts/ILAS06/`

(21) Vandebril R., Mastronardi N. and Van Barel M., *A Levinson Framework*, 13th ILAS conference, ILAS 2006, July 18-21, 2006, Amsterdam, Netherlands.
`http://staff.science.uva.nl/~brandts/ILAS06/`

(22) Van Barel M., Vandebril R. and Mastronardi N., *A Schur-Based Algorithm to Compute the Smallest Eigenvalue of Symmetric Positive Definite Toeplitz Matrices*, SIAM Annual Meeting, SIAM06, July 10-14, 2006, Boston, MA, USA.
`http://www.siam.org/meetings/an06/`

(23) Mastronardi N., Vandebril R. and Van Barel M., *A fast algorithm for recursively computing dominant singular subspaces*, Twelfth International Congress on Computational and Applied Mathematics, ICCAM 2006, July 10-14, 2006, Leuven, Belgium.
`http://www.iccam.ugent.be/`

(24) Vandebril R., Van Barel M. and Mastronardi N., *Computing the smallest singular value of tridiagonal matrices via semiseparable matrices*, Twelfth International Congress on Computational and Applied Mathematics, ICCAM 2006, July 10-14, 2006, Leuven, Belgium.
`http://www.iccam.ugent.be/`

(25) Vanberghen Y., Vandebril R. and Van Barel M., *The use of lower-semiseparable matrices to solved generalized eigenvalue problems*, Twelfth International Congress on Computational and Applied Mathematics, ICCAM 2006, July 10-14, 2006, Leuven, Belgium.
`http://www.iccam.ugent.be/`

(26) Van Barel M., Vandebril R., Mastronardi N., Delvaux S. and Vanberghen Y., *Rank structured matrix operations*, Workshop on State-of-the-Art in Scientific and Parallel Computing, PARA06, June 18-21, 2006, Umea, Sweden.
`http://www.hpc2n.umu.se/para06/`

(27) Mastronardi N., Van Barel M. and Vandebril R., *A Schur-Based Algorithm to Compute the Smallest Eigenvalue of Symmetric Positive Definite Toeplitz Matrices*, The 2nd International Conference on Structured Matrices, June 8-11, 2006, Hong Kong.
`http://www.math.hkbu.edu.hk/icsm2006/`

(28) Van Barel M., Vandebril R., Mastronardi N., Delvaux S. and Vanberghen Y., *Rank structured matrix operations*, The 2nd International Conference on Structured Matrices, June 8-11, 2006, Hong Kong.
http://www.math.hkbu.edu.hk/icsm2006/

(29) Vandebril R., Van Barel M., Mastronardi N., *A general Levinson framework for solving systems of equations*, Stanford University, May 25, 2006, Stanford, CA USA.
http://sccm.stanford.edu/seminar-s2006/index.htm

(30) Vandebril R., *A QR-decomposition for quasiseparable matrices*, Stanford University, May 19, 2006, Stanford, CA USA.

(31) Vandebril R., *The nullity theorem and some examples*, Stanford University, May 15, 2006, Stanford, CA USA.

(32) Vandebril R., Mastronardi N., Van Barel M., Van Huffel S. and Schuermans M., *The Lanczos reduction to semiseparable plus diagonal form*, 22nd GAMM-seminar on Large Scale Eigenvalue Computations, January 19–21, 2006, Max-Planck-Institute for Mathematics in Sciences, Germany.
http://www.mis.mpg.de/scicomp/gamm22/

(33) Vanberghen Y., Vandebril R. and Van Barel M., *The use of lower-semiseparable matrices to solved generalized eigenvalue problems*, 22nd GAMM-seminar on Large Scale Eigenvalue Computations, January 19–21, 2006, Max-Planck-Institute for Mathematics in Sciences, Germany.
http://www.mis.mpg.de/scicomp/gamm22/

(34) Mastronardi N., Van Barel M. and Vandebril R., *On computing the eigenvectors of a class of structured matrices*, 22nd GAMM-seminar on Large Scale Eigenvalue Computations, January 19–21, 2006, Max-Planck-Institute for Mathematics in Sciences, Germany.
http://www.mis.mpg.de/scicomp/gamm22/

(35) Van Barel M., Vandebril R., Mastronardi N., Delvaux S. and Vanberghen Y., *An overview of the use of rank structured matrices to solve eigenvalue problems*, 22nd GAMM-seminar on Large Scale Eigenvalue Computations, January 19–21, 2006, Max-Planck-Institute for Mathematics in Sciences, Germany.
http://www.mis.mpg.de/scicomp/gamm22/

2005

(36) Vandebril R., Mastronardi N. and Van Barel M., *A Levinson-like solver for semiseparable plus band matrices*, The Sixteenth International Workshop on Operator Theory and Applications, July 24-27, 2005, University of Connecticut, Storrs, USA.
http://www.math.uconn.edu/~iwota/

(37) Mastronardi N., Mieke Schuermans, Van Barel M., Vandebril R. and Van Huffel S., *The Lanczos reduction to semiseparable matrices and applications in computing dominant subspaces*, The Sixteenth International Workshop on Operator Theory and Applications, July 24-27, 2005, University of Connecticut, Storrs, USA.
http://www.math.uconn.edu/~iwota/

(38) Mastronardi N., Mieke Schuermans, Van Barel M., Vandebril R. and Van Huffel S., *The Lanczos reduction to semiseparable matrices*, 17th IMACS World Congress on Scientific Computation, Applied Mathematics and Simulation, July 11-15, 2005, Paris, France.
http://imacs2005.ec-lille.fr/

(39) Mastronardi N., Van Barel M., Vandebril R. and Van Camp E., *The Lanczos reduction to semiseparable matrices and applications in computing dominant subspaces*, SIAM Annual Meeting, July 11-15, 2005, New Orleans, LA, USA.
http://www.siam.org/meetings/an05/

(40) Mastronardi N., Vandebril R., Van Barel M., and Van Camp E., *The Lanczos reduction to semiseparable matrices and applications in computing dominant subspaces*, Householder Symposium 2005, May 23, 2005, Pennsylvania, USA.
http://www.cse.psu.edu/~hh2005/

(41) Vandebril R., Van Barel M., Mastronardi N. and Van Camp E., *Convergence properties of orthogonal similarity transformations*, Householder Symposium 2005, May 23, 2005,

Pennsylvania, USA.
http://www.cse.psu.edu/~hh2005/

2004

(42) Vandebril R., Van Barel M., Mastronardi N. and Van Camp E., *About the convergence properties of the reductions to semiseparable (plus diagonal) form*, Stanford University, Nov 15, 2004, Stanford, California, USA.
http://sccm.stanford.edu/seminar-f2004/index.htm

(43) Vandebril R., Van Barel M., Mastronardi N. and Van Camp E., *About the convergence properties of the reductions to semiseparable (plus diagonal) form*, UC Berkeley, Oct 20, 2004, Berkeley, California, USA.
http://math.berkeley.edu/calendar-event304.html

(44) Vandebril R., Van Camp E., Van Barel M., and Mastronardi N., *Orthogonal similarity transformation of a symmetric matrix into a diagonal-plus-semiseparable one with free choice of the diagonal*, Structured Numerical Linear Algebra Problems: Algorithms and Applications, September 19-24, 2004, Cortona, Italy.
http://www.dm.unipi.it/~cortona04/

(45) Vandebril R., and Van Barel M., *The nullity theorem and some generalizations*, Eleventh International Congress on Computational and Applied Mathematics, ICCAM 2004, July 26-30, 2004, Leuven, Belgium.
http://www.cs.kuleuven.ac.be/conference/iccam2004/iccam.htm

(46) Mastronardi N., Van Barel M., Van Camp E. and Vandebril R., *The QR-algorithm for arrowhead matrices*, Eleventh International Congress on Computational and Applied Mathematics, ICCAM 2004, July 26-30, 2004, Leuven, Belgium.
http://www.cs.kuleuven.ac.be/conference/iccam2004/iccam.htm

(47) Mastronardi N., Van Barel M., Van Camp E. and Vandebril R., *On computing the eigenvectors of a class of structured matrices*, Eleventh International Congress on Computational and Applied Mathematics, ICCAM 2004, July 26-30, 2004, Leuven, Belgium.
http://www.cs.kuleuven.ac.be/conference/iccam2004/iccam.htm

(48) Vandebril R., Van Barel M. and Mastronardi N., *A comparison between the semiseparable and the tridiagonal eigenvalue solvers*, Sixteenth International Symposium on Mathematical Theory of Networks and Systems (MTNS 2004), July 5-9, 2004, Leuven, Belgium.
http://www.mtns2004.be/

2003

(49) Van Barel M., Vandebril R. and Mastronardi N., *A similarity reduction of a symmetric matrix to a semiseparable one and the QR-algorithm to compute the eigenvalues of this semiseparable matrix*, Numerical Linear Algebra and Its Applications, XXI International School and Workshop, September 15-24, 2003, Porto Giardino, Monopoli, Bari, Italy.
http://www.cs.kuleuven.ac.be/~mase/Bari/

(50) Vandebril R., Van Barel M. and Mastronardi N., *A note on the representation of semiseparable matrices*, Numerical Linear Algebra and Its Applications, XXI International School and Workshop, September 15-24, 2003, Porto Giardino, Monopoli, Bari, Italy.
http://www.cs.kuleuven.ac.be/~mase/Bari/

(51) Van Barel M., Vandebril R., Van Camp E. and Mastronardi N., *Semiseparable matrices and eigenproblems*, Fourteenth International Workshop on Operator Theory and Applications, June 24-27, 2003, Cagliari, Italy.
http://bugs.unica.it/iwota2003

(52) Van Barel M., Vandebril R., Van Camp E. and Mastronardi N., *Semiseparable matrices and eigenproblems*, Russian Academy of Sciences: Institute of Numerical Mathematics, Steklov Institute of Mathematics, Workshop on nonlinear approximations in numerical analysis, June 22-25, 2003, Moscow, Russia.
http://bach.inm.ras.ru/album_vi/workshop/workshop.htm

(53) Vandebril R., Van Barel M. and Mastronardi N., *Solving symmetric eigenvalue problems using semiseparable matrices instead of trididagonal ones*, Cadzand Workshop, June 21-26, 2003, Cadzand, Netherlands.

(54) Vandebril R., Mastronardi N., Van Barel M. and Elden L., *On computing the eigendecomposition, rank revealing and the singular value decomposition of dense matrices*, Workshop: Due giornate di Algebra Lineare Numerica, March 6-7, 2003, Pisa, Italy.

(55) Mastronardi N., Vandebril R., Van Barel M., *On computing the eigendecomposition of dense matrices*, University of Linkoping, February 28, 2003, Linkoping, Sweden.

2002

(56) Vandebril R., Van Barel M. and Mastronardi N., *A new approach with semiseparable matrices to find the eigenvalues of symmetric matrices via the QR-algorithm*, GAMM meeting, September 13-14, 2002, Bielefeld, Germany.
`http://www.mathematik.uni-bielefeld.de/~numerik/Gamm_2002.html`

(57) Vandebril R. and Van Barel M., *A fast solver for a bivariate homogeneous interpolation problem*, ICCAM conference, July 22-26, 2002, Leuven, Belgium.
`http://www.cs.kuleuven.ac.be/conference/iccam2002/iccam.htm`

2001

(58) Vandebril R., Van Barel M. and Hendrickx J., *A new fast method for solving the Helmholtz equation*, SIAM Annual Meeting, July 9-13, 2001, San Diego, California, USA.
`http://www.siam.org/meetings/an01/body_index.htm`

Other talks:

(1) Vandebril R. and Van Barel M., *Structured rank matrices and their applications in numerical linear algebra*, Department of Electrical Engineering, October 27, 2005, Leuven, Belgium.

(2) Vandebril R., Van Barel M. and Mastronardi N., *Solving eigenvalue problems using semiseparable instead of tridiagonal matrices*, Department of Computer Science, November 27, 2003, Leuven, Belgium.

(3) Vandebril R. and Van Barel M., *Solving the block Toeplitz Toeplitz block system*, Dept. Mathematics, May 22, 2002, Leuven, Belgium.

(4) Vandebril R., Van Barel M., Ruatta O. and Mourrain B., *A new approach to the multivariate interpolation problem*, INRIA research institute, November 23, 2001, Sophia Antipolis, France.

Posters:

(1) Vandebril R., Van Barel M. and Van Camp E., *The QR-algorithm for semiseparable matrices*, Study day IAP-Scores, Oct 12, 2004, Leuven, Belgium.
`http://www.kuleuven.ac.be/scores/12-13oct2004.html`

(2) Van Barel M., Van Camp E., Vandebril R. and Mastronardi N., *The QR-algorithm for diagonal plus rank-one matrices*, V International Workshop on Accurate Solution of Eigenvalue Problems, IWASEP 5, June 28- July 1, 2004, Arcadeon Conference Center, Hagen, Germany.
`http://www.fernuni-hagen.de/MATHPHYS/iwasep5/`

(3) Vandebril R., Van Barel M. and Mastronardi, N., *A comparison between the eigenvalue solvers based on semiseparable and tridiagonal matrices*, V International Workshop on Accurate Solution of Eigenvalue Problems, IWASEP 5, June 28 - July 1, 2004, Arcadeon Conference Center, Hagen, Germany.
`http://www.fernuni-hagen.de/MATHPHYS/iwasep5/`

(4) Vandebril R., Codevico G., Van Camp E., Delvaux S. and Van Barel M., *Semiseparable matrices and the symmetric eigenvalue problem*, IAP Study Day, June 1, 2004, Gent, Belgium.
`http://www.inma.ucl.ac.be/IAPV/StudyDays/2004/June1.html`

(5) Vandebril R., Van Barel M. and Mastronardi N., *Semiseparable matrices and the SVD*, Ph.D.-days in Leuven, December 11, 2002, Leuven, Belgium.

(6) Vandebril R., Van Barel M. and Mastronardi N., *A new algorithm for computing the SVD via semiseparable matrices*, IAP study day, November 26, 2002, Louvain La Neuve, Belgium.
`http://www.inma.ucl.ac.be/IAPV/PAINEWS/2002/02_11.html`

4. Academic files: Publications

The next pages contain consecutively

- List of co-authors
- Books
- Book reviews
- Research publications
  - Impactfactors of the journals published in
  - In international journals with refereeing process
  - In conference proceedings
  - Revised Articles
  - Articles submitted for publication
  - In preparation
  - Scientific reports

List of co-authors

A bulleted list of co-authors of publications and technical reports:

- Beckermann, B.
- Del Corso, G. M.
- Golub, G. H.
- Güttel, S.
- Hendrickx, J.
- Mastronardi, N.
- Mourrain, B.
- Ruatta, O.
- Schuermans, M.
- Van Barel, M.
- Van Dooren, P.
- Van Camp, E.
- Van Huffel, S.
- Vanberghen, Y.
- Zhaojun, B.

Books

(1) Vandebril R., Van Barel M. and Mastronardi N., *Matrix Computations and Semiseparable Matrices II: Eigenvalue and Singular Value Methods*, xvi+498 pp. The Johns Hopkins University Press, Baltimore, December 2008 (ISBN-13: 978-0-8018-9052-9).
`http://www.press.jhu.edu/books/title_pages/9714.html`

(2) Vandebril R., Van Barel M. and Mastronardi N., *Matrix Computations and Semiseparable Matrices I: Linear Systems*, xviii+575 pp., The Johns Hopkins University Press, Baltimore, 2007 (ISBN-13: 978-0-8018-8714-7).
`http://www.press.jhu.edu/books/title_pages/9085.html`
Remark: Appeared in the list of 20 bestsellers in Mathematics (16th position):
`http://www.libraryjournal.com/info/CA6554754.html`

Published book reviews

(1) Chu T.M. and Golub H.G., *Inverse eigenvalue probems: Theory, algorithms, and applications*, Numerical Mathematics and Scientific Computing, Oxford University Press, 2005.
Reviewed by Vandebril R., Mathematics of Computation, 75(254):1025-1031.

Research Publications

Impactfactors

Journal \ Year	2004	2005	2006	2007	2008
Calcolo	0.333	0.621	0.143	0.467	0.621
Electronic Transactions on Numerical Analysis	0.565	0.608	0.738	0.486	0.486
Ieee Transactions on Automatic Control	1.545	2.159	2.772	2.824	3.293
Journal of Computational and Applied Mathematics	0.486	0.569	0.759	0.943	1.048
Linear Algebra and its Applications	0.501	0.590	0.585	0.702	0.878
Mediterranean Journal of Mathematics	×	×	×	0.414	0.357
Numerical Algorithms	0.264	0.456	0.466	0.527	0.610
Numerical Linear Algebra with Applications	0.727	0.791	0.860	0.696	0.822
Numerische Mathematik	1.011	1.222	1.116	1.376	1.691
Siam Journal on Matrix Analysis and Applications	0.727	1.148	1.798	0.984	1.328
Siam Journal on Scientific Computing	1.231	1.509	1.824	1.784	1.157

In international journals (with refereeing process):

2008

(1) Vandebril R., Van Barel M. and Mastronardi N., *Rational QR-iteration without inversion*, Numerische Mathematik, 110(4):561–575, September 2008. (pag. 15 , Scholar citations: 1)

(2) Vandebril R., Van Barel M. and Mastronardi N., *A parallel QR-factorization/solver of structured rank matrices*, Electronic Transactions on Numerical Analysis, 30:144–167, 2008. (pag. 24 , Scholar citations: 4)

(3) Vanberghen Y., Vandebril R. and Van Barel M., *A QZ-algorithm for semiseparable matrices*, Journal of Computational and Applied Mathematics, 218(2):482–491, September 2008. (pag. 10 , Scholar citations: 2 , ISI citations: 1)

(4) Mastronardi N., Van Barel M. and Vandebril R., *A fast algorithm for the recursive calculation of dominant singular subspaces*, Journal of Computational and Applied Mathematics, 218(2):238–246, September 2008. (pag. 9 , Scholar citations: 1)

(5) Mastronardi N., Van Barel M. and Vandebril R., *A Schur-based algorithm for computing the smallest eigenvalue of a symmetric positive definite Toeplitz matrix*, Linear Algebra and its Applications, 428(2–3):479–491, January 2008. (pag. 13)

(6) Mastronardi N., Van Barel M. and Vandebril R., *A fast algorithm for computing the smallest eigenvalue of a symmetric positive definite Toeplitz matrix*, Numerical Linear Algebra with Applications, 15(4):327–337, January 2008. (pag. 10)

2007

(7) Vandebril R., Mastronardi N. and Van Barel M., *Solving linear systems with a Levinson-like solver*, Electronic Transactions on Numerical Analysis, 26:243–269, 2007. (pag. 27 , Scholar citations: 1 , ISI citations: 1)

(8) Vandebril R., Mastronardi N. and Van Barel M., *A Levinson like algorithm for strongly nonsingular symmetric higher order semiseparable plus band matrices*, Journal of Computational and Applied Mathematics, 198(1):74–97, January 2007. (pag. 23 , Scholar citations: 7 , ISI citations: 2)

2006

(9) Vandebril R., Van Camp E., Van Barel M and Mastronardi N., *On the convergence properties of the orthogonal similarity transformations to tridiagonal and semiseparable (plus diagonal) form*, Numerische Mathematik, 104:205–239, August 2006. (pag. 34 , Scholar citations: 7 , ISI citations: 2)

(10) Vandebril R., Van Barel M. and Mastronardi N., *A short note on the nullity theorem*, Journal of Computational and Applied Mathematics, 189:179–190, May 2006. (pag. 11 , Scholar citations: 2 , ISI citations: 1)

(11) Mastronardi N., Van Barel M., Van Camp E. and Vandebril R., *On computing the eigenvectors of a class of structured matrices*, Journal of Computational and Applied Mathematics, 189:580–591, May 2006. (pag. 11 , Scholar citations: 4 , ISI citations: 2)

(12) Vandebril R. and Van Barel M., *Necessary and sufficient conditions for orthogonal similarity transformations to obtain the Ritz values*, Linear Algebra and its Applications, 414(2–3):435–444, April 2006. (pag. 10 , Scholar citations: 2)

(13) Vandebril R., Golub G. and Van Barel, M., *A small note on the scaling of positive definite semiseparable matrices*, Numerical Algorithms, 41:319–326, March 2006. (pag. 8)

(14) Vandebril R., Van Camp E., Van Barel M. and Mastronardi N., *Orthogonal similarity transformation of a symmetric matrix into a diagonal-plus-semiseparable one with free choice of the diagonal*, Numerische Mathematik, 102:709–726, February 2006. (pag. 20 , Scholar citations: 13 , ISI citations: 6)

2005

(15) Mastronardi N., Schuermans M., Van Barel M., Vandebril R. and Van Huffel S., *A Lanczos-like reduction of symmetric structured matrices to semiseparable form*, Calcolo, 42(3-4):227–241, December 2005. (pag. 15 , Scholar citations: 2)

(16) Vandebril R., Van Barel M., Golub G. and Mastronardi N., *A bibliography on semiseparable matrices*, Calcolo, 42(3-4):249–270, December 2005. (pag. 22 , Scholar citations: 25 , ISI citations: 10)

(17) Vandebril R., Van Barel M. and Mastronardi N., *A note on the representation and definition of semiseparable matrices*, Numerical Linear Algebra with Applications, 12:839–858, October 2005. (pag. 20 , Scholar citations: 48 , ISI citations: 21)

(18) Vandebril R., Van Barel M. and Mastronardi M., *An implicit QR-algorithm for semiseparable matrices to compute the eigendecomposition of symmetric matrices*, Numerical Linear Algebra with Applications, 12:625–658, September 2005. (pag. 34 , Scholar citations: 47 , ISI citations: 12)

(19) Vandebril R., Van Barel M. and Mastronardi N., *An implicit Q-theorem for Hessenberg-like matrices*, Mediterranean Journal of Mathematics, 3:259–275, September 2005. (pag. 19 , Scholar citations: 5)

(20) Mastronardi N., Van Barel M. and Vandebril R., *A note on the recursive calculation of dominant singular subspaces*, Numerical Algorithms, 38:237–242, April 2005. (pag. 6 , Scholar citations: 1 , ISI citations: 1)

(21) Van Barel M., Vandebril R. and Mastronardi N., *An orthogonal similarity reduction of a matrix into semiseparable form*, SIAM Journal on Matrix Analysis and Applications, 27(1):176–197, January 2005. (pag. 22 , Scholar citations: 28 , ISI citations: 9)

2004

(22) Vandebril R., Van Barel M. and Mastronardi N., *A QR-method for computing the singular values via semiseparable matrices*, Numerische Mathematik, 99:163–195, November 2004. (pag. 32 , Scholar citations: 16 , ISI citations: 4)

2003

(23) Hendrickx J., Vandebril R. and Van Barel M., *A fast method for solving the two-dimensional Helmholtz equation with Robbins boundary conditions*, Contemporary Mathematics 323:187–204, January 2003. (pag. 17 , Scholar citations: 1)

In conference proceedings:

(1) Mastronardi N., Schuermans M., Van Barel M., Vandebril R., Van Huffel S., ed. Borne P.*The Lanczos reduction to semiseparable matrices*, published in the proceedings of the 17th IMACS World Congress on Scientific Computation, Applied Mathematics and Simulation, Paris, France, July 2005. (pag. 6)

(2) Vandebril R., Van Barel M. and Mastronardi N., *A comparison between the semiseparable and tridiagonal eigenvalue solvers*, published in the Proceedings of the MTNS conference in Leuven, 2004. (pag. 10)

Papers under revision (in international journals with refereeing):

(1) Van Barel M., Vandebril R. and Van Dooren P., *Implicit double shift QR-algorithm for companion matrices*, submitted for publication (internal report: TW532), 2008. (pag. 27)
(2) Vandebril R., *On tridiagonal matrices unitarily equivalent to normal matrices*, revised version submitted for publication (internal report: TW529), 2008. (pag. 24)
(3) Vandebril R., *A unitary similarity transform of a normal matrix to complex symmetric form*, 2009. (pag. 6)
(4) Vandebril R. and Del Corso G. M. *An implicit multishift QR-algorithm for Hermitian plus low rank matrices*, submitted for publication (internal report: TR09-06), 2009. (pag. 32)
`http://compass2.di.unipi.it/TR/`
(5) Beckermann B., Güttel S. and Vandebril R. *On the asymptotic convergence of rational Ritz-values*, submitted for publication, 2009. (pag. 37)

Submitted for publication (to international journals with refereeing):

(1) Vandebril R. and Zhaojun Bai, An $O(n^2)$ QR-method for computing the eigenspectrum of the Hatano-Nelson transition matrix, 2009. (pag. 20)

Internal reports (most of the reports are published in international journals):

2008

(1) Vandebril R., *On tridiagonal matrices unitarily equivalent to normal matrices*, submitted for publication (internal report: TW529), 2008. (pag. 24)
(2) Van Barel M., Vandebril R. and Van Dooren P., *Implicit double shift QR-algorithm for companion matrices*, submitted for publication (internal report: TW532), 2008. (pag. 27)
(3) Mastronardi N., Van Barel M. and Vandebril R., *On the computation of the nullspace of Toeplitz–like matrices*, accepted for publication in Electronic Transactions on Numerical Algorithms (internal report: TW516), 2008. (pag. 12)

2007

(4) Vandebril R., Van Barel M. and Mastronardi N., *A new iteration for computing the eigenvalues of semiseparable (plus diagonal) matrices*, accepted for publication in Electronic Transactions on Numerical Algorithms, (internal report: TW507), 2007. (pag. 22)
(5) Vandebril R., Van Barel M. and Mastronardi N., *A rational QR-iteration*, (internal report: TW504), 2007. Published in Numerische Mathematik, online available. (pag. 19)
(6) Vandebril R., Van Barel M. and Mastronardi N., *A multiple shift QR-step for structured rank matrices*. Published in Journal of Computational and Applied Mathematics (internal report: TW489), 2007. (pag. 24)

2006

(7) Mastronardi N., Van Barel M. and Vandebril R., *A fast algorithm for computing the smallest eigenvalue of a symmetric positive definite Toeplitz matrix*, (internal report: TW493), 2006. Published in Numerical Linear Algebra with Applications. (pag. 14)
(8) Vandebril R., Golub G. and Van Barel M., *On solving the definite generalized tridiagonal eigenvalue problem.* accepted for publication in SIAM Journal on Matrix Analysis and Applications,(internal report: TW485), 2006. (pag. 14)
(9) Vandebril R., Van Barel M. and Mastronardi N., *A parallel QR-factorization/solver of structured rank matrices*, (internal report: TW474), 2006. Published in Electronic Transactions on Numerical Analysis. (pag. 22)
(10) Vanberghen Y., Vandebril R. and Van Barel M., *A QZ-algorithm for semiseparable matrices*, (internal report: TW471), 2006. Published in Journal of Computational and applied mathematics. (pag. 15)
(11) Mastronardi N., Van Barel M. and Vandebril R., *A fast algorithm for the recursive calculation of dominant singular subspaces*, (internal report: TW468), 2006. Published in Journal of Computational and applied mathematics (pag. 13)

(12) Mastronardi N., Van Barel M. and Vandebril R., *A Schur-based algorithm for computing the smallest eigenvalue of a symmetric positive definite Toeplitz matrix*, (internal report: TW461), 2006. Published in Linear Algebra and its Applications. (pag. 13)

2005

(13) R. Vandebril, N. Mastronardi, and M. Van Barel, *Solving linear systems with a Levinson-like solver*, K.U.Leuven, Department of Computer Science, Report TW 435, August, 2005. Published in Electronic Transactions on Numerical Analysis. (pag. 25)

(14) R. Vandebril, E. Van Camp, M. Van Barel, and N. Mastronardi, *On the convergence properties of the orthogonal similarity transformations to tridiagonal and semiseparable (plus diagonal) form*, K.U.Leuven, Department of Computer Science, Report TW 436, , 2005. Published in Numerische Mathematik, 2005. (pag. 27)

(15) N. Mastronardi, M. Van Barel and R. Vandebril, *A fast algorithm on subspace tracking*, K.U.Leuven, Department of Computer Science, Report TW430, May, 2005. (pag. 7)

(16) R. Vandebril, N. Mastronardi and M. Van Barel, *A Levinson like algorithm for strongly nonsingular symmetric higher order semiseparable plus band matrices*, K.U.Leuven, Department of Computer Science, Report TW427, April, 2005. Published in Journal of Computational and Applied Mathematics. (pag. 22)

(17) N. Mastronardi, R. Vandebril and M. Van Barel, *A Levinson like algorithm for symmetric positive definite semiseparable plus diagonal matrices*,K.U.Leuven, Department of Computer Science, Report TW423, March, 2005.

(18) N. Mastronardi, M. Schuermans, M. Van Barel, R. Vandebril and S. Van Huffel, *A Lanczos like reduction of symmetric structured matrices to semiseparable form*, K.U.Leuven, Department of Computer Science, Report TW420, March, 2005. Published in Calcolo. (pag. 16)

(19) N. Mastronardi, M. Van Barel and R. Vandebril, *Computing the rank revealing factorization of symmetric matrices by the semiseparable reduction*, K.U.Leuven, Department of Computer Science, Report TW418, March, 2005. (pag. 12)

2004

(20) R. Vandebril, M. Van Barel, G. Golub, and N. Mastronardi, *A bibliography on semiseparable matrices*, Department of Computer Science, K.U.Leuven, Report TW 412, Leuven, Belgium, December, 2004. Published in Calcolo. (pag. 22)

(21) R. Vandebril, G. Golub, and M. Van Barel, *A small note on the scaling of symmetric positive definite semiseparable matrices*, Stanford's Scientific Computing and Computational Mathematics Program (SCCM) SCCM-04-16, December, 2004. Published in Numerical Algorithms. (pag. 6)

(22) N. Mastronardi, E. Van Camp, M. Van Barel, and R. Vandebril, *On computing the eigenvectors of a class of structured matrices*, K.U.Leuven, Department of Computer Science, Report TW 407, September, 2004. Published in Journal of Computational and Applied Mathematics. (pag. 15)

(23) R. Vandebril, E. Van Camp, M. Van Barel, and N. Mastronardi, *Orthogonal similarity transformation of a symmetric matrix into a diagonal-plus-semiseparable one with free choice of the diagonal*, K.U.Leuven, Department of Computer Science, Report TW 398, August, 2004. Published in Numerische Mathematik. (pag. 14)

(24) R. Vandebril, and M. Van Barel, *Necessary and sufficient conditions for orthogonal similarity transformations to obtain the Ritz values*, K.U.Leuven, Department of Computer Science, Report TW 396, July, 2004. Published in Linear Algebra and its Applications. (pag. 9)

(25) R. Vandebril, and M. Van Barel, *A short note on the nullity theorem*, K.U.Leuven, Department of Computer Science, Report TW 397, July, 2004. Published in Journal of Computational and Applied Mathematics. (pag. 15)

(26) R. Vandebril, M. Van Barel, and N. Mastronardi, *An implicit Q-theorem for Hessenberg-like matrices*, R. Vandebril, M. Van Barel, and N. Mastronardi, Department of Computer Science, K.U.Leuven, Report TW 394, Leuven, Belgium, June, 2004. Published in the Mediterranean Journal of Mathematics (pag. 20)

(27) N. Mastronardi, M. Van Barel, and R. Vandebril, *A note on the recursive calculation of dominant singular subspaces*, K.U.Leuven, Department of Computer Science, Report TW 393, June, 2004. Published in Numerical Algorithms. (pag. 4)

2003

(28) R. Vandebril, M. Van Barel, and N. Mastronardi, *A note on the representation and definition of semiseparable matrices*, Department of Computer Science, K.U.Leuven, Report TW 368, Leuven, Belgium, October, 2003. Published in Numerical Linear Algebra with Applications. (pag. 25)

(29) R. Vandebril, M. Van Barel, and N. Mastronardi, *A QR-method for computing the singular values via semiseparable matrices*, Department of Computer Science, K.U.Leuven, Report TW 366, Leuven, Belgium, August, 2003. Published in Numerische Mathematik. (pag. 32)

(30) R. Vandebril, M. Van Barel, and N. Mastronardi, *An implicit QR algorithm for semiseparable matrices, to compute the eigendecomposition of symmetric matrices*, Department of Computer Science, K.U.Leuven, Report TW 367, Leuven, Belgium, August, 2003. Published in Numerical Linear Algebra with Applications. (pag. 31)

(31) M. Van Barel, R. Vandebril, and N. Mastronardi, *The Lanczos-Ritz values appearing in an orthogonal similarity reduction of a matrix into semiseparable form*, Department of Computer Science, K.U.Leuven, Report TW 360, Leuven, Belgium, May, 2003.

(32) R. Vandebril, M. Van Barel, and N. Mastronardi, *An orthogonal similarity reduction of a matrix to semiseparable form*, Department of Computer Science, K.U.Leuven, Report TW 355, Leuven, Belgium, February, 2003. Published in SIAM Journal on Matrix Analysis and Applications. (pag. 24)

2002

(33) R. Vandebril, and M. Van Barel, *A fast solver for a bivariate polynomial vector homogeneous interpolation problem*, Department of Computer Science, K.U.Leuven, Report TW 342, Leuven, Belgium, July, 2002.

(34) R. Vandebril, M. Van Barel, O. Ruatta, and B. Mourrain, *A new algorithm for solving multivariate polynomial problems by means of interpolation*, Department of Computer Science, K.U.Leuven, Report TW 343, Leuven, Belgium, July, 2002.

2001

(35) J. Hendrickx, R. Vandebril, and M. Van Barel, *A fast method for solving the two-dimensional Helmholtz equation with Robbins boundary conditions*, Department of Computer Science, K.U.Leuven, Report TW 326, Leuven, Belgium, June 2001. Published in Contemporary Mathematics. (pag. 17)

5. Software related

The next pages contain consecutively

- Mathematical programming
- Sites written

Software (Mathematical):

I am acquinted with the following (mathematical) programming languages:

- Matlab, see SSPACK, a full software package for doing numerical computations using structured rank matrices in Matlab.
  `http://www.cs.kuleuven.be/~raf/homepage/software/sspack.php`
- Notions of Fortran (I've written a Helmholtz solver in F77).
- Notions of C++. Currently I am participating in the GLAS project (Generic Linear Algebra Software), a C++ environment for doing numerical computations. I am writing a toolbox for structured rank matrices.
  `http://www.cs.kuleuven.be/~karlm/glas/`
- Maple & Mathematica.
- PHP: hypertext preprocessor.
- MySQL: open source relational database management system.

Sites written:

The following sites are written in html, using thereby php and mysql.

- Bibtool: a complete database manipulation tool for managing bibtex files. The tool includes pdf storage, separate databases for authors, papers, journals, and so forth.
  `http://www.cs.kuleuven.be/~raf/bibtex/`
- My personal homepage:
  `http://www.cs.kuleuven.be/~raf/`
- Sites for conferences/workshops:
  `http://www.cs.kuleuven.be/~raf/ade2008/`
  `http://www.cs.kuleuven.be/~raf/bari2008/`
  `http://www.cs.kuleuven.be/~raf/bari2007/`
  `http://www.cs.kuleuven.be/~raf/bari2006/`
  `http://www.cs.kuleuven.be/~raf/dysco/`
- Site for the MaSe group:
  `http://www.cs.kuleuven.be/~raf/mase/`
- Startup site for Optec (COE-OE: "Center of Excellence: Optimization in Engineering" at that time).