

# Curriculum Vitae



## Personal details

<b>Title(s)</b>	Prof.dr.ir.
<b>First name</b>	Dick
<b>Surname</b>	den Hertog
<b>Date of birth</b>	4 February 1967

## Master's degree

<b>University</b>	Technical University Delft, Faculty of Technical Mathematics and Informatics
<b>Date of graduation</b>	1989
<b>Topic</b>	Technical Mathematics, specialisation Operations Research Title MSc thesis: Interior point methods for linear programming
<b>Distinction</b>	Cum Laude

## Doctorate

<b>University</b>	Technical University Delft, Faculty of Technical Mathematics and Informatics
<b>Date of graduation</b>	1992
<b>Topic</b>	Operations Research Title dissertation: Interior point approach to linear, quadratic and convex programming: algorithms and complexity
<b>Distinction</b>	Cum Laude

## Professional affiliations

<b>1989-1992</b>	PhD student, Faculty of Technical Mathematics and Informatics, Technical University Delft
<b>1992-1995</b>	Consultant Operations Research at CQM
<b>1995-1998</b>	Senior Consultant Operations Research at CQM
<b>1998-2000</b>	Top Consultant Operations Research at CQM
<b>2000-2020</b>	Full Professor Operations Research, School of Economics and Management, Tilburg University

<b>2002-2006</b>	Coordinator Operations Research track of Business Graduate School, School of Economics and Management, Tilburg University
<b>2006-2010</b>	Vice-dean Research and Director CentER, School of Economics and Management, Tilburg University
<b>2016-2019</b>	Scientific Director <i>Data Science Center Tilburg (DSC/t)</i>
<b>2017-2019</b>	Leader of TiU Impact Theme "Creating Value from Data"
<b>2019-present</b>	Visiting Professor MIT, Cambridge, US – 7 weeks per year
<b>2020-present</b>	Full Professor Operations Research, Amsterdam Business School, University of Amsterdam

## Awards

<b>1989</b>	Delft University Fund Award for best faculty master thesis
<b>1994</b>	Finalist A.W. Tucker Prize of the Mathematical Programming Society, Ann Arbor
<b>2000</b>	EURO Best Applied Paper Award, Budapest (with H.P. Stehouwer)
<b>2001</b>	Teaching Quality Award (School level)
<b>2003</b>	Best Teacher Award (School level)
<b>2004, 2005</b>	Docent of the year (Departmental level)
<b>2013</b>	INFORMS Franz Edelman Award for dike height optimization project
<b>2015</b>	Research Valorization Award (School level)
<b>2017</b>	IISE Best Paper Award
<b>2017</b>	Best Teacher Data Expert Program (Professional Learning)
<b>2021</b>	INFORMS Franz Edelman Award for food supply chain UN World Food Programme.

## Grants

<b>2002</b>	Grant from SamenwerkingsOrgaan Brabantse Universiteiten for PhD student Bart Husslage (200,000 euro)
<b>2008</b>	NWO Mozaïek grant for PhD student Mohammed Chahim (220,000 euro)
<b>2009</b>	NWO Graduate Program grant (800,000 euro)
<b>2012</b>	EU Marie Curie ITN Action "Mixed Integer Nonlinear Optimization" for PhD student Ahmadreza Marandi (225,000 euro)
<b>2013</b>	NWO Grant Free Competition for PhD student Jianzhe Zhen (200,000 euro)
<b>2013</b>	NWO Research Talent for PhD student Krzysztof Postek (160,000 euro)

<b>2014</b>	NWO Research Talent for PhD student Frans de Ruiter (160,000 euro)
<b>2017</b>	NWO Research Talent for PhD student Ernst Roos (214,000 euro)
<b>2019</b>	NWO SGW Open Competition PhD grant (252,000 euro)
<b>2020</b>	ENW-groot Grant, Main Applicant, with University of Amsterdam, TU Delft, Tilburg University, and CWI (2.5 million euro)
<b>2020</b>	EU grant for PhD in RAPTOR project (250,000 euro)
<b>2021</b>	ASF Grant (9,000 euro) for sustainability research
<b>2021</b>	Grant from Data Science Center UvA for Data Scientist
<b>2021</b>	Sustainability grant (6,400 euro) for developing cases in course Analytics for a Better World
<b>2021</b>	NWO grant for PhD position (250,000 euro)

## PhD thesis supervision

<b>PhD students - year of defense</b>	<ul style="list-style-type: none"> <li>- Mevlude Ebru Angun (Turkey) – 2004</li> <li>- Lonneke Driessen (Netherlands) – 2006</li> <li>- Bart Husslage (Netherlands) – 2006</li> <li>- Erwin Stinstra (Netherlands) – 2006</li> <li>- Gamal Elabwabi (Sudan) – 2007</li> <li>- Alex Siem (Netherlands) – 2008</li> <li>- Katya Vladislavleva (Russia) – 2008</li> <li>- Gijs Rennen (Netherlands) – 2009</li> <li>- Elleke Janssen (Netherlands) – 2010</li> <li>- Ozge Ozdemir (Turkey) – 2013</li> <li>- Mohammed Chahim (Netherlands) – 2013</li> <li>- Ihsan Yanikoglu (Turkey) – 2014</li> <li>- Bram Gorissen (Netherlands) – 2014</li> <li>- Ehsan Mehdad (Iran) – 2015</li> <li>- Krzysztof Postek (Poland) – 2017</li> <li>- Marleen Balvert (Netherlands) – 2017</li> <li>- Ahmadreza Marandi (Iran) – 2017</li> <li>- Frans de Ruiter (Netherlands) – 2018</li> <li>- Jianzhe Zhen (China) – 2018</li> <li>- Ernst Roos (Netherlands) - 2021</li> <li>- Stefan ten Eikelder (Netherlands) - 2021</li> </ul>
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**Current PhD students**

- Koen Peters (Netherlands)
  - Valentijn Stienen (Netherlands, per September 2018)
  - Wouter van Eekelen (Netherlands, per September 2019)
  - Jorn Baayen (Netherlands, per November 2019)
  - Danique de Moor (Netherlands, per January 2020)
  - Meike Reusken (Netherlands, per May 2020)
  - Donato Maragno (Italy, per November 2020)
  - Merel Wemelsfelder (Netherlands, per September 2020)
  - Parvathy Krishnan (India, per Spring 2021)
  - Justin Starreveld (Netherlands, per September 2021)
  - Zihang Qiu (China, per September 2021)
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**Journal editor**

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<b>2000-2006</b>	Editor for <i>STATOR</i>
<b>2000-2011</b>	Associate editor for <i>Operations Research Letters</i>
<b>2008-2011</b>	Associate editor for <i>Journal of Industrial and Management Optimization</i>
<b>2012-2019</b>	Associate editor for <i>Management Science</i> – area Optimization
<b>2012-present</b>	Associate editor for <i>Operations Research</i> – area Optimization
<b>2017-present</b>	Associate editor for <i>INFORMS Journal on Optimization</i>

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**Other academic activities**

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<b>1989-1992</b>	Member of "Committee for Science", Technical University Delft
<b>1990-1992</b>	Member Board of Dept. Stochastics, Statistics and Operations Research, Technical University Delft
<b>1989-1990</b>	Member of organizing committee of symposium "Interior Point Methods for Linear Programming: Theory and Practice", Scheveningen, January 18-19
<b>1994-1998</b>	Secretary Board of the Dutch Operations Research Society
<b>2000</b>	Member jury A.W. Tucker Prize 2000 of Mathematical Programming Society
<b>2000, 2002, 2006</b>	Member of organizing committee of HPOPT 2000, HPOPT 2002 and HPOPT 2006
<b>2000-2003</b>	Member jury for the VVS thesis prize
<b>2002</b>	Chairman Wim Bogers Stichting conference
<b>2002-2005</b>	Chairman Wim Bogers Stichting
<b>2004</b>	Chairman Program Committee Operations Research
<b>2005-2006</b>	Chairman Education Committee, Tilburg School of Economics and Management, Tilburg University

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<b>2008</b>	Member SIAG/Opt Prize 2008 Committee
<b>2012-2016</b>	Board member of "Dutch Network on the Mathematics of Operations Research (LNMB)"
<b>2016-2020</b>	Chairman of "Dutch Network on the Mathematics of Operations Research (LNMB)"
<b>2016-2020</b>	Research Coordinator Operations Research group, TiSEM
<b>2018-2020</b>	Board member of the Dutch Big Data Alliance
<b>2020</b>	Member Farkas Prize of INFORMS Optimization Society
<b>2020-2021</b>	Organizer Worldwide <i>Robust Optimization Webinar</i> (>180 subscriptions)
<b>2020-present</b>	Co-organizer Worldwide <i>Analytics for a Better World Webinar</i> (>630 subscriptions) (together with D. Bertsimas, MIT)
<b>2020-present</b>	Co-organizer Worldwide <i>Analytics for Practitioners Webinar</i> (> 400 subscriptions) (together with D. Bertsimas, MIT)
<b>2021-present</b>	Head of Operations Management group at Amsterdam Business School

### Main research interests

		publications
<b>1989-1992</b>	Interior Point Methods	[1-7,9-12,B1, R1-R5]
<b>1992-2000</b>	Practical projects	[13,18,26,C1-C3,P1-P3]
<b>2000-2011</b>	Black-box Optimization	[13-21,23-24,27-33,35-36,38-43,P4-P7]
	Applied research	[25,34,45-47]
<b>2011-present</b>	Robust Optimization	[48-51,55-57,59-60,62,63,65-73,75-77,80-81,83-85,87-89 R8,R10-R12,R14-R22]
	Applied research	[52-54,58,61,64,74,78-79,82,86,88,90,91,R13,R17]
<b>2020-present</b>	Optimization with Machine Learning	[R9]

## Examples of applied projects

- **Configuration of telephone exchanges for AT&T (1992-1993)**
  - Publications: [C1]
- **Simulation-based optimization of different parts of the Philips TV (1994-1999)**
  - This work has been awarded with the "EURO Best Applied Paper Award" (2000).
  - Publications: [13]
- **Optimization of the European physical distribution structure of Philips Consumer Electronics (1995)**
  - Publications: [C2]
- **Optimal maintenance schedule for the Dutch rail infrastructure (1997-1999)**
  - Publications: [18,26]
- **Dike height optimization for the Dutch Government (2008 – 2016)**
  - Final results have been accepted by House of Parliament, and now stated in the Dutch Water Act.
  - Estimated savings: more than 7 billion euros.
  - Awarded with the INFORMS Franz Edelman Prize (2013)
  - Publications: [53,54,64,74]
- **Optimization in radiotherapy (2004 – current)**
  - Publications: [25,34,45-47,52,58,61,78,79,82,88,91,R13]
- **Optimal food supply chain for World Food Program (2016 – current)**
  - Optimization model has been applied to Yemen, Syria, Iraq, Ethiopia, and several countries in Africa.
  - Publication: [86,R17]
- **Optimization of health facility locations (2020 – current)**
  - In cooperation with the World Bank
  - Especially for the countries Timor-Leste and Vietnam.

## Publication List

### Journal papers:

[91] Robust dose-painting-by-numbers vs. nonselective dose escalation for non-small cell lung cancer patients  
S.F. Petit, S. Breedveld, J. Unkelbach, D. den Hertog, M. Balvert (2022), To appear in *Medical Physics*.

[90] Optimal depot locations for humanitarian logistics service providers using robust optimization  
Stienen, V., Wagenaar, J., den Hertog, D., Fleuren, H. (2022), To appear in *Omega*.

[89] A universal and structured way to derive dual optimization problem formulations  
K. Roos, M. Balvert, B.L. Gorissen, D. den Hertog, *Inform Journal on Optimization*, 2(4), 229-255.

[88] Optimal treatment plan adaptation using mid-treatment imaging biomarkers  
Ten Eikelder, S.C.M., Ferjančič, P., Ajdari, A., Bortfeld, T., den Hertog, D., Jeraj, R. (2020), *Physics, Medicine and Biology*, 65 (24), 245011.

[87] A distributionally robust analysis of the program evaluation and review technique  
Roos, E.R., den Hertog, D. (2021), *European Journal on Operational Research*, 291(3), 918-928.

- [86] The nutritious supply chain: Optimizing humanitarian food assistance  
Peters, K., Fleuren, H., den Hertog, D., Kavelj, M., Silva, S., Goncalves, R. (2021), *INFORMS Journal on Optimization*, 3(2), 200-226.
- [85] Extending the scope of robust quadratic optimization  
Marandi, A., Ben-Tal, A., den Hertog, D., Melenberg, B. (2020) To appear in *INFORMS Journal on Computing*
- [84] Robust optimization for models with uncertain SOC and SDP constraints  
Zhen, J., De Ruiter, F.J.C.T., den Hertog, D. (2022) To appear in *INFORMS Journal on Computing*.
- [83] Reducing conservatism in Robust Optimization  
Roos, E.R., den Hertog, D. (2020), *INFORMS Journal on Computing*, 32 (4), 1109-1127.
- [82] Optimal combined proton-photon therapy schemes based on the standard BED model  
Ten Eikelder, S.C.M., den Hertog, D., Bortfeld, T.M., Perkó, Z. (2019) *Physics in Medicine and Biology* 64(6), 065011.
- [81] An approximation framework for two-stage ambiguous stochastic integer programs under mean-MAD information  
Postek, K., Romeijnders, W., den Hertog, D., Van der Vlerk, M.H. (2019) *European Journal of Operational Research* 274 (2), 432-444
- [80] A survey of adjustable robust optimization  
Yanikoğlu, İ., Gorissen, B., den Hertog, D. (2019), *European Journal of Operational Research* 277 (3), 799-813
- [79] Robust optimization of dose-volume metrics for prostate HDR-brachytherapy incorporating target- and OAR volume delineation uncertainties  
Balvert, M., den Hertog, D., Hoffmann, A. (2019) *INFORMS Journal on Computing* 31(1), 100-114.
- [78] Uncertainties in dose-response relations strongly affect the expected gains of robust dose-painting  
Petit, S., Breedveld, S., Unkelbach, J., Den Hertog, D., Balvert, M. (2018) *Radiotherapy and Oncology* 127, S478-S479.
- [77] When are static and adjustable robust optimization problems with constraint-wise uncertainty equivalent?  
Marandi, A., den Hertog, D. (2018) *Mathematical Programming* 170 (2), 555-568.
- [76] Adjustable robust optimization via fourier-motzkin elimination  
Zhen, J., den Hertog, D., Sim, M. (2018) *Operations Research* 66 (4), 1086-1100.
- [75] Robust optimization with ambiguous stochastic constraints under mean and dispersion information  
Postek, K., Ben-Tal, A., den Hertog, D., Melenberg, B. (2018) *Operations Research* 66 (3), 814-833.
- [74] Adjustable robust strategies for flood protection  
Postek, K., den Hertog, D., Kind, J. & Pustjens, C. (2019) *Omega* 82, 142-154.
- [73] Computing the maximum volume inscribed ellipsoid of a polytopic projection  
Zhen, J., den Hertog, D. (2017) *INFORMS Journal on Computing*, 30(1), 31-42.
- [72] Globalized robust optimization for nonlinear uncertain inequalities  
Ben-Tal, A., Brekelmans, R., den Hertog, D., Vial, J.-Ph. (2017) *INFORMS Journal on Computing*, 29(2), 350-366.
- [71] Robust shift generation in workforce planning  
van Hulst, D., den Hertog, D., Nuijten, W. (2017) *Computational Management Science*, 14(1), 115-134.
- [70] Centered solutions for uncertain linear equations  
Zhen, J., den Hertog, D. (2017) *Computational Management Science*, 14(4), 585-610.

- [69] Robust optimization of uncertain multistage inventory systems with inexact data in decision rules  
de Ruiter, F., Ben-Tal, A., Brekelmans, R. & den Hertog, D. (2017) *Computational Management Science*, 14(1), 45-66.
- [68] Adjustable Robust Optimisation approach to optimise discounts for multi-period supply chain coordination under demand uncertainty  
Buhayenko, V., den Hertog, D. (2017) *International Journal of Production Research* 55(22), 6801-6823.
- [67] Computationally tractable counterparts of distributionally robust constraints on risk measures  
Postek, K., den Hertog, D., Melenberg, B. (2016) *SIAM Review*, 58(4), 603-650.
- [66] The impact of the existence of multiple adjustable robust solutions  
de Ruiter, F., Brekelmans, R. & den Hertog, D. (2016) *Mathematical Programming*, 160(1-2), 531-545.
- [65] Multi-stage adjustable robust mixed-integer optimization via iterative splitting of the uncertainty set  
Postek, K. & den Hertog, D. (2016) *INFORMS Journal on Computing*, 28(3), 553-574.
- [64] Optimal strategies for flood prevention  
Eijgenraam, C., Brekelmans, R., den Hertog, D. & Roos, C. (2016) *Management Science*, 63(5), 1644-1656.
- [63] Globalized robust optimization for nonlinear uncertain inequalities  
Ben-Tal, A., Brekelmans, R., den Hertog, D. & Vial, J. P. (2017) *INFORMS Journal on Computing*, 29 (2), 350-366.
- [62] Robust dual-response optimization  
Yanikoglu, I., den Hertog, D. & Kleijnen, J. P. C. (2016) *IIE Transactions: Industrial Engineering Research and Development*, 48(3), 298-312.
- [61] A framework for inverse planning of beam-on times for 3D small animal radiotherapy using interactive multi-objective optimization  
Balvert, M., van Hoof, S. J., Granton, P. V., Trani, D., den Hertog, D., Hoffmann, A. L. & Verhaegen, F. (2015) *Physics in Medicine and Biology*, 60(14), 5681-5698.
- [60] A practical guide to robust optimization  
Gorissen, B., Yanikoglu, I. & den Hertog, D. (2015) *Omega* 53, 124-137.
- [59] Deriving robust counterparts of nonlinear uncertain inequalities  
Ben-Tal, A., den Hertog, D. & Vial, J. P. (2015) *Mathematical Programming*, 149(1-2), 265-299.
- [58] Dwell time modulation restrictions do not necessarily improve treatment plan quality for prostate HDR brachytherapy  
Balvert, M., Gorissen, B. L., den Hertog, D. & Hoffmann, A. L. (2015) *Physics in Medicine and Biology*, 60(2), 537-548.
- [57] Deriving robust and globalized robust solutions of uncertain linear programs having general convex uncertainty sets  
Gorissen, B. L., Blanc, J. P. C., den Hertog, D. & Ben-Tal, A. (2014) *Operations Research*, 62(3), 672-679.
- [56] A mixed integer nonlinear optimization approach to optimize dike heights in the Netherlands  
Brekelmans, R., Eijgenraam, C., den Hertog, D. & Roos, C. (2014) *Optima Mathematical Optimization Society Newsletter*, 94.
- [55] Hidden conic quadratic representation of some nonconvex quadratic optimization problems  
Ben-Tal, A. & den Hertog, D. (2014) *Mathematical Programming*, 143(1-2), 1-29.
- [54] Economically efficient standards to protect the Netherlands against flooding



Eijgenraam, C., Kind, J., Bak, C., Brekelmans, R. C. M., den Hertog, D., Duits, M., Roos, C., Vermeer, P. J. & Kuijken, W. (2014) *Interfaces*, 44(1), 7-21.

[53] An impulse control approach to dike height optimization

Chahim, M., Brekelmans, R. C. M., den Hertog, D. & Kort, P. M. (2013) *Optimization Methods and Software*, 28(3), 458-477.

[52] Mixed integer programming improves comprehensibility and plan quality in inverse optimization of prostate HDR Brachytherapy

Gorissen, B. L., den Hertog, D. & Hoffmann, A. L. (2013) *Physics in Medicine and Biology*, 58(4), 1041-1058.

[51] Robust counterparts of inequalities containing sums of maxima of linear functions

Gorissen, B. L. & den Hertog, D. (2013) *European Journal of Operational Research*, 227(1), 30-43.

[50] Robust solutions of optimization problems affected by uncertain probabilities

Ben-Tal, A., den Hertog, D., De Waegenaere, A. M. B., Melenberg, B. & Rennen, G. (2013) *Management Science*, 59(2), 341-357.

[49] Safe approximations of ambiguous chance constraints using historical data

Yanikoglu, I. & den Hertog, D. (2013) *INFORMS Journal on Computing*, 25(4), 666-681.

[48] Approximating the Pareto set of multiobjective linear programs via robust optimization

Gorissen, B. L. & den Hertog, D. (2012) *Operations Research Letters*, 40(5), 319-324.

[47] Feasibility of convex optimisation with radiobiological models for prostate HDR-brachytherapy

Steenbergen, F., den Hertog, D., Gorissen, B. L. & Hoffmann, A. L. (2012) *Radiotherapy and Oncology*, 103, S30-S31.

[46] Mixed integer programming for dose and dose-volume based optimization in prostate HDR-brachytherapy

Gorissen, B. L., den Hertog, D. & Hoffmann, A. L. (2012) *Radiotherapy and Oncology*, 103, S130.

[45] Modulation restrictions do not necessarily improve treatment plan quality for HDR prostate brachytherapy

Balvert, M., Gorissen, B. L., den Hertog, D. & Hoffmann, A. L. (2012) *Radiotherapy and Oncology*, 103, S142.

[44] Safe dike heights at minimal costs: The nonhomogeneous case

Brekelmans, R. C. M., den Hertog, D., Roos, C. & Eijgenraam, C. (2012) *Operations Research*, 60(6), 1342-1355.

[43] A method for approximating univariate convex functions using only function value evaluations

Siem, A. Y. D., den Hertog, D. & Hoffmann, A. L. (2011) *INFORMS Journal on Computing*, 23(4), 591-604.

[42] Enhancement of sandwich algorithms for approximating higher dimensional convex Pareto sets

Rennen, G., van Dam, E. R. & den Hertog, D. (2011) *INFORMS Journal on Computing*, 23, (4), 493-517.

[41] Space-filling Latin hypercube designs for computer experiments

van Dam, E. R., den Hertog, D., Husslage, B. G. M. & Rennen, G. (2011) *Optimization and Engineering*, 12(4), 611-630.

[40] Nested maximin Latin hypercube designs

Rennen, G., Husslage, B. G. M., van Dam, E. R. & den Hertog, D. (2010) *Structural and Multidisciplinary Optimization*, 41, 371-395.

[39] On the importance of data balancing for symbolic regression

Vladislavleva, E., Smits, G. & den Hertog, D. (2010) *IEEE Transactions on Evolutionary Computation*, 14(2), 252-277.

- [38] One-dimensional nested maximin designs  
van Dam, E. R., Husslage, B. G. M. & den Hertog, D. (2010) *Journal of Global Optimization*, 46(2), 287-306.
- [37] Solving the Battleship puzzle as an integer programming problem  
Meuffels, W. J. M. & den Hertog, D. (2010) *INFORMS Transactions on Education*, 10(3), 156-162.
- [36] Order of nonlinearity as a complexity measure for models generated by symbolic regression via Pareto genetic programming  
Vladislavleva, E., Smits, G. F. & den Hertog, D. (2009) *IEEE Transactions on Evolutionary Computation*, 13(2), 333-349.
- [35] Response surface methodology with stochastic constraints for expensive simulation  
Angun, M. E., Kleijnen, J. P. C., den Hertog, D. & Gürkan, G. (2009) *The Journal of the Operational Research Society*, 60(6), 735-746.
- [34] Convex reformulation of biologically-based multi-criteria intensity-modulated radiation therapy optimization including fractionation effects  
Hoffmann, A. L., Siem, A. Y. D., den Hertog, D., Kaanders, J. H. A. M. & Huizenga, H. (2008) *Physics in Medicine and Biology*, 53, 6345-6362.
- [33] Discrete least-norm approximation by nonnegative (trigonometric) polynomials and rational functions  
Siem, A. Y. D., de Klerk, E. & den Hertog, D. (2008) *Structural and Multidisciplinary Optimization*, 35(4), 327-339.
- [32] Gradient estimation using Lagrange interpolation polynomials  
Brekelmans, R. C. M., Driessen, L., Hamers, H. J. M. & den Hertog, D. (2008) *Journal of Optimization Theory and Applications*, 136(3), 341-357.
- [31] On the complexity of optimization over the standard simplex  
de Klerk, E., den Hertog, D. & Elfadul, G. E. E. (2008) *European Journal of Operational Research*, 191, 773-785.
- [30] Robust optimization using computer experiments  
Stinstra, E. & den Hertog, D. (2008) *European Journal of Operational Research*, 191(3), 816-837.
- [29] The effect of transformations on the approximation of univariate (convex) functions with applications to Pareto curves  
Siem, A. Y. D., den Hertog, D. & Hoffmann, A. L. (2008) *European Journal of Operational Research*, 189(2), 347-362.
- [28] Efficient line searching for convex functions  
den Boef, E. & den Hertog, D. (2007) *SIAM Journal on Optimization*, 18(1), 338-363.
- [27] Maximin Latin hypercube designs in two dimensions  
van Dam, E. R., den Hertog, D., Husslage, B. G. M. & Melissen, H. (2007) *Operations Research*, 55(1), 158-169.
- [26] The Netherlands schedules track maintenance to improve track workers' safety  
van Zante-de Fokkert, J. I., den Hertog, D., van den Berg, F. J. & Verhoeven, J. H. M. (2007) *Interfaces*, 37(2), 133-142.
- [25] Derivative-free generation and interpolation of convex Pareto optimal IMRT plans  
Hoffmann, A. L., Siem, A. Y. D., den Hertog, D., Kaanders, J. H. A. M. & Huizenga, H. (2006) *Physics in Medicine and Biology*, 51(24), 6349-6369.
- [24] On D-optimality based trust regions for black-box optimization problems  
Driessen, L., Brekelmans, R. C. M., Hamers, H. J. M. & den Hertog, D. (2006) *Structural and Multidisciplinary Optimization*, 31(1), 40-48.

- [23] Response surface methodology's steepest ascent and step size revisited: Correction  
Kleijnen, J. P. C., den Hertog, D. & Angun, M. E. (2006) *European Journal of Operational Research*, 170(2), 664-666.
- [22] Solving Rummikub problems by integer linear programming  
den Hertog, D. & Hulshof, P. B. (2006) *The Computer Journal*, 49(6), 665-669.
- [21] The correct Kriging variance estimated by bootstrapping  
den Hertog, D., Kleijnen, J. P. C. & Siem, A. Y. D. (2006) *The Journal of the Operational Research Society*, 57(4), 400-409.
- [20] Constrained optimization involving expensive function evaluations: A sequential approach  
Brekelmans, R. C. M., Driessen, L., Hamers, H. J. M. & den Hertog, D. (2005) *European Journal of Operational Research*, 160(1), 121-138.
- [19] Gradient estimation schemes for noisy functions  
Brekelmans, R. C. M., Driessen, L., Hamers, H. J. M. & den Hertog, D. (2005) *Journal of Optimization Theory and Applications*, 126(3), 529-551.
- [18] Optimal working zone division for safe track maintenance in the Netherlands  
den Hertog, D., van Zante-de Fokkert, J. I., Sijamaar, S. A. & Beusmans, R. (2005) *Accident Analysis and Prevention*, 37(5), 890-893.
- [17] Response surface methodology's steepest ascent and step size revisited  
Kleijnen, J. P. C., den Hertog, D. & Angun, M. E. (2004) *European Journal of Operational Research*, 159(1), 121-131.
- [16] Collaborative metamodeling: Coordinating simulation-based product design  
Husslage, B. G. M., van Dam, E. R., den Hertog, D., Stehouwer, H. P. & Stinstra, E. (2003) *Concurrent Engineering: Research and Applications*, 11(4), 267-278.
- [15] Constrained maximum designs for computer experiments  
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[7] A build-up variant of the path-following method for LP

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[6] A complexity reduction for the long-step path-following algorithm for linear programming

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[5] A large-step analytic center method for a class of smooth convex programming problems

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### **Reports and Discussion Papers**

[R22] An extension of the Reformulation-Linearization Technique to nonlinear optimization

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[R21] Robust Convex Optimization: A New Perspective That Unifies And Extends

D. Bertsimas, D. den Hertog, J. Pauphilet, J. Zhen, Working Paper.

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[R18] Pareto Adaptive Robust Optimality via a Fourier-Motzkin Elimination Lens

D. Bertsimas, S. ten Eikelder, D. den Hertog, N. Trichakis, arXiv preprint arXiv:2012.04419

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[R16] Tight tail probability bounds for distribution-free decision making

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[R14] MAD dispersion measure makes extremal queue analysis simple

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- [R12] Disjoint bilinear programming: a two-stage robust optimization perspective  
 Zhen, J., Marandi, A., den Hertog, D., Vandenberghe, L. (2018) Working Paper, [http://www.optimization-online.org/DB\\_FILE/2018/06/6685.pdf](http://www.optimization-online.org/DB_FILE/2018/06/6685.pdf)
- [R11] Approximation of hard uncertain convex inequalities  
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- [R8] Robust nonlinear optimization via the dual  
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- [R7] Optimization of univariate functions on bounded intervals by interpolation and semidefinite programming  
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- [R6] Why methods for optimization problems with time-consuming function evaluations and integer variables should use global approximation models  
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- [R4] Adding and deleting constraints in the path-following method for LP  
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- [R2] Iri's polynomiality proof for the Iri-Imai method recast  
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- [R1] A polynomial method of approximate weighted centers for linear programming  
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### **Books:**

- [B1] Interior point approach to linear, quadratic and convex programming: Algorithms and complexity  
 den Hertog, D. (1994) Dordrecht: Kluwer Academic Publishers. (Mathematics and its applications; no. 277)  
 (2<sup>nd</sup> Edition published in 2012).

[B2] Robust Optimization, D. Bertsimas, D. den Hertog (will be finished December 2021).

### **Book chapters:**

[C3] OR-consultants at CQM: Make optimization work!

den Hertog, D. & Jansen, B. (1997) *Ten years LNMB: Ph.D. Research and Graduate Courses of the Dutch Network of Operations Research*. Vrieze, O. J., Kallenberg, L. C. M. & K Haneveld, W. (eds.). Amsterdam: Centrum voor Wiskunde en Informatica, 317-322. (CWI Tract; no. 122)

[C2] Uw ideale fysieke distributiestructuur bepalen? Hoe kwantitatieve analyse u kan helpen

Fleuren, H. A. & den Hertog, D. (1996) *Handboek Fysieke Distributie*. Alphen aan de Rijn: SAMSON.

[C1] Configuration of telephone exchanges

Benders, J. F., den Hertog, D. & Lukkassen, R. W. J. (1995) *OR at work, Practical Experiences of Operational Research*. London: Taylor & Francis, 39-52.

### **Conference papers:**

[P7] Multivariate convex approximation and least-norm convex data-smoothing

Siem, A. Y. D., den Hertog, D. & Hoffmann, A. L. (2006) *Proceedings of the 6th International Conference on Computational Science and Applications (ICCSA 2006)*. Gavrilova, M., Gervasi, O., Kumar, V., Tan, C. J. K., Taniar, A., Mun, Y. & Choo, H. (eds.). Berlin Heidelberg: Springer Verlag, Vol. 3982, p. 812-821 (Lecture Notes in Computer Science).

[P6] Scheduling variable-bit-rate data to minimize total resource costs

den Boef, E. & den Hertog, D. (2003) *Book of Abstracts of 6th Workshop on Models and Algorithms for Planning and Scheduling Problems*. Aussois: INFORMS, 103-104.

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Angun, M. E., Gürkan, G., den Hertog, D. & Kleijnen, J. P. C. (2002) *Proceedings of the 2002 Winter Simulation Conference*. Yucesan, E., Chen, C. H., Snowdon, J. L. & Charnes, J. M. (eds.). San Diego: WSC, p. 377-383.

[P4] A sequential approach to product and process design involving expensive function evaluation

Brekelmans, R. C. M., Driessen, L., Hamers, H. J. M. & den Hertog, D. (2001) *Proceedings of the 3rd ASMO/ISSMO Conference on Engineering Design Optimization*. Querin, O. M. (ed.). Harrogate, North Yorkshire: University of Leeds.

[P3] Product and process optimization with simulation

den Hertog, D. & Stehouwer, H. P. (2000) *Proceedings of ESIM 2000*. Zhang, G. Q. (ed.). Boston: Kluwer Academic Publishers, p. 179-192.

[P2] Creation and evaluation of compact models for thermal characterisation using dedicated optimisation software

Lasance, C. J. M., den Hertog, D. & Stehouwer, H. P. (1999) *Proceedings of the fifteenth annual semiconductor thermal measurement and management symposium*. San Diego: IEEE.

[P1] Simulation-based design optimisation: Methodology and applications (Extended abstract)

Stehouwer, H. P. & den Hertog, D. (1999) *Proceedings of the first ASMO UK / ISSMO conference on engineering design optimization, Ilkley, UK, July 8-9, 1999*. Bradford, West Yorkshire: Association for Structural and Multidisciplinary Optimization in the UK (ASMO UK), Vol. 1

### **Book editing**

Operations Research Proceedings 2004

Fleuren, H. A. (ed.), den Hertog, D. (ed.) & Kort, P. M. (ed.) (2005) Berlin: Springer Verlag. 486 p.

### **Doctoral Thesis**

Interior point approach to linear, quadratic and convex programming: Algorithms and complexity

den Hertog, D. (1992) 207 p.

### Inaugural speech

Hart en rede in de besliskunde (in Dutch)

den Hertog, D. (2002) Tilburg: Katholieke Universiteit Brabant. 44 p.

### **Other publications:**

Advancing society in a digital era: Science with a soul.

Wilthagen, T., Denollet, J.K., den Hertog, D. (2017).

Optimaliseren? Doe het robuust! (in Dutch)

Brekelmans, R. C. M. & den Hertog, D. (2010) *STAtOR*, December Issue, p. 24-27.

Optimalisatie van bestralingsbehandeling tegen kanker; Operations Research toegepast voor radiotherapie (in Dutch)

Hoffmann, A. L. & den Hertog, D. (2008) *STAtOR*, December Issue, p. 4-8.

Integral product optimization: Get more out of your simulation models (in dutch)

den Hertog, D., Stehouwer, H. P., Bouwman, V., Ter Weeme, J. W. & Zhang, K. (1999) *De Constructeur* 2, 19-21.

Efficient optimization technics implemented in DOT-software of CQM

den Hertog, D. (1997) *Philips Natlab Journaal*, 9, 6-7.

Interview with D. den Hertog

den Hertog, D. (1995) *Optima*: p. 5-6.

Optimalisatie van het produkt- en procesontwerp: Efficiënte zoektechniek geïmplementeerd in DOT-software (in Dutch)

Fluren, H. A., den Hertog, D. & Tuyt, H. L. (1995) *CA Techniek: Tijdschrift voor Industriële Automatisering*, 14(10), 24-28.

### **Invited lectures (since 2013 only):**

***Economically efficient standards to protect the Netherlands against flooding***, INFORMS Meeting, Finalist Franz Edelman Award, April 7-9, 2013. Keynote speaker.

***Practical Robust Optimization: a tutorial***, Annual Danish OR workshop, June 28-30, 2013. Invited speaker.

***Robust optimization using computer experiments***, 7<sup>th</sup> International Conference on Sensitivity Analysis of Model Output, MASCOT-SAMO 2013, July 1-4. Invited speaker.

***Practical Robust Optimization***, IBM seminar, Dublin, Ireland, May 14, 2013. Invited speaker.

***Practical robust optimization: an introduction***, International Conference on Operations Research, OR2013, Rotterdam, The Netherlands, September 4-6, 2013. Semi-plenary speaker.

***Economically efficient standards to protect the Netherlands against flooding***, INFORMS annually meeting, October 6-9, 2013. Keynote speaker (Franz Edelman Award Winning Presentation).

***Robust Optimization***, 7<sup>th</sup> PhD Summer Academy, June 16-July 11, 2014 at the Zaragoza Logistics Center in Zaragoza, Spain. Invited course teacher.

***Adjustable robust optimization for sustainable water policy pathways***, Third Annual Workshop on Decision Making Under Deep Uncertainty, November 3-5, Delft, The Netherlands, 2015. Invited speaker.

**A tutorial on Robust Optimization**, Workshop "Robust Optimization in Applied Probability", November 8-10, 2015, Eurandom institute in Eindhoven, Invited speaker.

**Two ways to solve a robust nonlinear optimization problem: via the primal or the dual**, 12<sup>th</sup> International Conference on Computational Management Science 2015, Prague, May 27-29, 2015. Keynote speaker.

**Robust optimization with ambiguous stochastic constraints under mean and dispersion information**, MIT, Boston, ORC seminar, May 5<sup>th</sup> 2016. Invited speaker.

**Tutorial on Robust Optimization**, HEC, Montreal, May 9<sup>th</sup>, 2016. Invited speaker.

**Robust optimization with ambiguous stochastic constraints under mean and dispersion information**, Technion, Conference on "Continuous Optimization: Challenges and Applications", September 5-8, 2016, Haifa, Israel. Invited speaker.

**Robust optimization with ambiguous stochastic constraints under mean and dispersion information**, EPFL, Lausanne, Switzerland, September 22<sup>nd</sup>, 2016. Invited speaker.

**Tutorial on Robust Optimization**, International Workshop "Models and Methods of Robust Optimization", Fraunhofer ITWM, Kaiserslautern, Germany, March 9-10, 2017. Invited speaker.

**Is DRO the only approach for optimization problems with convex uncertainty?**, Workshop on "Distributional Robust Optimization", Banff, March 4-9, 2018. Invited speaker.

**Tutorial on Robust Optimization**, INFORMS meeting, 2019, Austin. Invited for tutorial.

**What every OR practitioner should know about Robust Optimization**, EURO conference, 2019, Dublin. Plenary speaker.

**Robust Convex Optimization: A New Perspective That Unifies And Extends**, MIT, Boston, ORC seminar, September 24<sup>th</sup> 2020. Invited speaker.

**Optimization for Zero Hunger**, International Workshop, Fraunhofer ITWM, Kaiserslautern, Germany, October, 2021. Invited speaker.