

Current Vitae of Yu-Hong Dai

PERSONAL DATA



Family Name: **DAI**
Given Name: **Yu-Hong**
Birthplace: **LianYuan, HuNan**
Birthdate: **August 28, 1971**
Nationality: **Chinese**

BASIC INFORMATION

POSITION	Professor State Key Laboratory of Scientific and Engineering Computing Institute of Comput. Math. and Sci./Engr. Computing Academy of Mathematics and Systems Science (AMSS) Chinese Academy of Sciences (CAS)
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POSTAL ADDRESS	No. 55, ZhongGuanCun East Road South Bldg., Academy of Mathematics and Systems Science P. O. Box 2719, Beijing 100190, P. R. China Tel: +86-10-8254-1912 Fax: +86-10-6254-5820 Email: dyh@lsec.cc.ac.cn www: http://lsec.cc.ac.cn/~dyh
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RESEARCH INTERESTS

- **Continuous Optimization**
- **Integer Programming**
- **Applied Optimization**

CURRENT MAJOR DUTIES

- **Vice President**, AMSS, CAS
- **President**, Asia-Pacific Operational Research Society
- **President**, Operations Research Society of China
- **Director**, Center for Optimization and Applications, AMSS, CAS

EDUCATION

<i>MASTER-PH.D. STUDY</i> JULY 1992-JUNE 1997	Institute of Computational Mathematics and Scientific Engineering Computing, Chinese Academy of Sciences (under Professor Ya-xiang Yuan), Received Ph.D.
<i>UNDERGRADUATE</i> SEPTEMBER 1988 - JULY 1992	Department of Applied Mathematics, Beijing Institute of Technology, Beijing, China, Received B.Sc.

WORKING EXPERIENCES

<i>FENG KANG CHAIR PROFESSOR</i> (JAN. 2014-DEC. 2016)	Academy of Mathematics and Systems Science Chinese Academy of Sciences
<i>PROFESSOR</i> (SINCE FEB. 2006)	Academy of Mathematics and Systems Science Chinese Academy of Sciences
<i>ASSOCIATE PROFESSOR</i> (DEC. 1998-JAN. 2006)	Academy of Mathematics and Systems Science Chinese Academy of Sciences
<i>ASSISTANT PROFESSOR</i> (JUL. 1997- NOV. 1998)	Institute of Computational Mathematics and Scientific/ Engineering Computing, Chinese Academy of Sciences

SOME MAJOR ACADEMIC VISITS

AUG. 2014 - SEP. 2014	School of Civil and Environmental Engineering, Cornell University (as visiting professor, cooperated with C. S. Shoemaker)
JAN. 2014 - DEC. 2004	Department of Mathematics, University of Bayreuth, Germany (as a Humboldt research fellow, cooperated with K. Schittkowski)
MAY 2002 - APRIL 2003	Department of Mathematics, University of Dundee, UK (cooperated with R. Fletcher under EPSRC)
JULY 2001 - SEP. 2001	Dept. of Mathematics, Federal University of Parana, Brazil (invited by J. Y. Yuan)
JULY 1997 - OCT. 1997	DAMPT, Cambridge University, UK (invited by M. J. D. Powell)

SELECTED TALKS

- **45 Minute Invited Talk, The International Congress of Mathematician 2022 (ICM2022), July 6-14, 2022**
- **Plenary Talk, The 24th International Symposium on Mathematical Programming (ISMP2022), Beijing, August 15-20, 2022**
- **Plenary Talk, The 19th Annual Meeting of the China Society for Industrial and Applied Mathematics (CSIAM2021), Hefei, October 7-10, 2021.**
- **Plenary Talk, American Mathematical Society-Chinese Mathematical Society Joint Meeting (AMS-CMS Meeting), Shanghai, June 11-14, 2018**
- **Plenary Talk, The XII Brazilian Workshop on Continuous Optimization, Foz Do Iguacu, Brazil, July 22-28, 2018**
- **Memorial Talk to memorize Roger Fletcher, The 15th EUROPT Workshop on Advances in Continuous Optimization, Montreal, July 12-15, 2017**
- **Semi-Plenary Talk, The 5th International Conference on Continuous Optimization (ICCOPT2016), Tokyo, August 6-11, 2016 (A flagship conference organized by Mathematical Optimization Society every three years)**
- **Plenary Talk, The 10th Annual Meeting of China Society for Computational Mathematics, Guangzhou, September 18-22, 2015**
- **Plenary Talk, The 9th Annual Meeting of Operations Research Society of China, Shenyang, October 19-22, 2012**

AWARDS AND HONORS

2022	Fellow, Operations Research Society of China (ORSC)
2021	Fellow, China Society for Industrial and Applied Mathematics (CSIAM)
2020	Excellent Supervisor Award of Chinese Academy of Sciences (awarded by Chinese Academy of Sciences)
2018	The First Xiao Shutie Applied Mathematics Prize (awarded by China Society for Industrial and Applied Mathematics)
2017	Shiing-Shen Chern Mathematics Prize (awarded by Chinese Mathematical Society)
2017	National Leading Talents in Scientific and Technology Innovation
2015	Feng Kang Scientific Computing Prize
2014	Feng Kang Chair Professor, AMSS, Chinese Academy of Science
2011	National Science Fund for Distinguished Young Scholars
2011	Best Paper Award, International Conference on Communications (ICC2011), Japan (with Yafeng Liu and Zhiquan Luo)
2009	Best Paper Award of Systems Science from 1979 to 2009
2007	Science and Technology Award for Chinese Youths
2006	The State Natural Science Award, Second Class (joint with Prof. Ya-xiang Yuan)
2004	The Humboldt Research Fellowship
2001	Excellent Course (awarded by Graduate University of the Chinese Academy of Sciences)
1998	Zhong Jia-Qing Mathematics Prize (awarded by Chinese Mathematical Society)

SELECTED EDITORSHIP AND RESPONSIBILITY

SINCE 2022	Vice President, Academy of Mathematics and Systems Science, Chinese Academy of Sciences
2022-2024	President, Asia-Pacific Operational Research Society (APORS)
SINCE 2021.1	Editor-in-Chief, Operations Research Transactions
SINCE 2021.1	Vice Editor-in-Chief, Journal of the Operations Research Society of China
2020.10-2024.10	President, Operations Research Society of China (ORSC)
SINCE 2020	Associate Editor, Journal of Global Optimization
SINCE 2020	Executive Member of the Council, Chinese Mathematical Society
SINCE 2019	Director, Center for Optimization and Applications, Academy of Mathematics and Systems Sciences (AMSS), Chinese Academy of Sciences
2016.10-2020.10	Vice President, Operations Research Society of China (ORSC)
SINCE 2016	Assistant President, AMSS, Chinese Academy of Sciences
2015-2016	Review Panel, Ministry of Mathematical Science, NSFC
2014-2019	President, Mathematical Programming Subociety of ORSC
SINCE 2014.7	Vice Editor-in-Chief, Mathematica Numerica Sinica
SINCE 2013.7	Associate Editor, International Transactions in Operational Research
2010-2018	Associate Editor, Advances in Mathematics
SINCE 2009.12	Vice Director, Center for Optimization and Applications, AMSS, Chinese Academy of Sciences
SINCE 2008	Associate Editor, Asia-Pacific Journal of Operational Research
2006-2014	Vice President, Mathematical Programming Subociety of ORSC

PRESIDING/PRESIDED GRANTS FROM GOVERNMENT

1. “Mathematical Theory and Algorithms for Some Key Technologies of Smart City Transportation System”, National Key R&D Program of China, 2021.12-2026.11, RMB15,000,000.
2. “Theory for Optimization Methods and Applications”, Foundation for Innovative Research Groups of Chinese Natural Science Foundation, 2021.1-2025.12, RMB6,700,000.
3. “Mixed Integer Programming Algorithms for Large-Scale Stochastic Games”, Strategic Priority Research Program of Chinese Academy of Sciences, 2020.7-2025.6, RMB20,000,000.
4. “Artificial Intelligence Methods for Mixed Integer Programming”, Major Projects of Chinese Natural Science Foundation, 2020.1-2024.12, RMB4,620,000.
5. “Optimization Theory and Methods for Big Data Analysis”, Key Projects of Chinese Natural Science Foundation, 2017.1-2021.12, RMB2,300,000.
6. “National Leading Talents Program in Scientific and Technology Innovation”, Chinese Ministry of Science and Technology, 2017.1-2020.12, RMB80,000.
7. “Statistical Learning of Unstructured Data: Mathematical Theory and Algorithms (Sub-project: Optimization Methods for Unstructured Data)”, National Basic Research Program of China (973 Program), 2015.1-2019.12, RMB1,750,000.
8. “Network Optimization in Complicated Environment: Theory and Applications”, The CAS Program for Cross & Cooperative Team of the Science & Technology Innovation, 2013.1-2015.12, RMB1,000,000.
9. “Theory and Methods for Numerical Optimization”, The China National Funds for Distinguished Young Scientists, 2012.1-2015.12, RMB1,680,000.
10. “First Order Optimization Method and Applications”, Chinese Natural Science Foundation, 2006-2008, RMB240,000.
11. “Algorithms and Theory for Large-Scale Optimization”, Chinese Natural Science Foundation, 2002-2004, RMB120,000.
12. “Further Study on Nonlinear Conjugate Gradient Methods”, Chinese Natural Science Foundation for Youth, 1998-2001, RMB48,000.
13. “Convergence Analysis of Quasi-Newton Methods”, Youth Creation Foundation of Chinese Academy of Sciences, 1998-2001, RMB50,000.

REAL PROJECTS FROM INDUSTRY

1. “Mathematical Basis of Artificial Intelligence”, Beijing Academy of Artificial Intelligence, 2019.07-2021.06, RMB1,400,000.
2. “Presolving and Heuristic Algorithms of Mathematical Optimization Solver”, Huawei Technology Co., Ltd, 2020.07-2021.04, RMB636,000.
3. “Integer Optimization Technology for Network Flow and Packing Problem”, Huawei Technology Co., Ltd, 2020.07-2021.05, RMB1,113,000.
4. “Small Signal Feature Extraction Model of Overlapped Targets”, Beijing Institute of Electronic Engineering, 2020.04-2020.11, RMB350,000.
5. “Information Fusion Method based on Infrared Image Correlation Features”, Beijing Institute of Electronic Engineering, 2020.03-2020.09, RMB200,000.
6. “Optimization Technology in ECS”, Zhejiang Tmall Technology Co., Ltd., 2020.02-2021.02, RMB498,600.
7. “Computing Technology for Large Scale Mixed Integer Linear Programming”, Huawei Technology Co., Ltd, 2019.05-2019.12, RMB1,060,000.

8. “Research on algorithm and solver of online trajectory optimization”, Shanghai Institute of Aerospace Systems Engineering, 2019.01-2019.12, RMB800,000.
9. “Periodic Small Signal Recovery Algorithms”, Beijing Institute of Electronic Engineering, 2018.10-2019.10, RMB180,000.
10. “Efficient Algorithms for Sorting AGV Crossing Distribution Problem”, Zhejiang Cuisine Bird Supply Chain Management Co., Ltd., 2018.01-2018.6, RMB400,000.
11. “Multi-Objective Optimization for Steady State Natural Gas Pipeline Network Operation”, PetroChina Co. Ltd., 2015.11-2016.01, RMB480,000.
12. “Fast algorithm for Stochastic Mixed Integer Programming”, China Electric Power Research Institute, 2014.06-2015.05, RMB450,000.
13. “Large Scale Stochastic Medium Term Operation Optimization in New Energy”, China Electric Power Research Institute, 2014.06-2015.05, RMB562,000.
14. “Large Scale Stochastic Medium Term Operation Optimization and Parallelization Technology in New Energy”, China Electric Power Research Institute, 2013.11-2014.05, RMB375,000.
15. “Sequential Linear Programming Algorithms for the Pooling Problem”, Beijing Salien Co. Ltd., 2012.07-2013.06, RMB300,000.

TEACHING EXPERIENCES

- Lectured the courses “Numerical Methods for Optimization” and “Practical Algorithms for Optimization” at the Graduate University of the Chinese Academy of Sciences from 2001 to 2011

PH.D. AND POSTDOCS

- Has co-supervised 12 postdocs up to now and is co-supervising 2 postdocs
- Has supervised 20 Ph.D. students up to now, including
 - Chunfeng CUI*, Professor, Beihang University, China (Received: Zhong Jia-Qing Mathematics Prize)
 - Zi XU*, Professor, Shanghai University, China (Received: Youth Science and Technology Award of ORSC)
 - Yafeng LIU*, Associate Professor, AMSS, Chinese Academy of Sciences, China (Received: National Science Fund for Excellent Young Scholars)
 - Caixia KOU*, Associate Professor, Beijing University of Posts and Telecommunications, China
 - Bo JIANG*, Associate Professor, Nanjing Normal University, China
 - Weikun CHEN*, Assistant Professor, Beijing Institute of Technology, China (Received: Excellent Doctoral Dissertation of Chinese Academy of Sciences)
 - Tianxiang LIU*, Assistant Professor, Tokyo Institute of Technology, Japan
 - Rui DIAO*, Software Engineer, Google, New York, USA

ABROAD VISITORS (MORE THAN ONE WEEK)

- Prof. **Philippe L. Toint**, University of Namur, Belgium, Nov. 1-15, 2020 (postponed)
- Prof. **Celso Ribiero**, Universidade Federal Fluminense, Brazil, June 28 to July 25, 2019
- Prof. **Oleg Burdakov**, Linkoping University, Sweden, June 6 to June 26, 2018

- Prof. **Florian Jarre**, Heinrich-Heine-Universität, Germany, June 21 to July 20, 2017
- Prof. **Jiming Peng**, University of Houston, USA, May 15 to June 15, 2017
- Dr. **Hui-Ju Chen**, National Cheng Kung University, July 16, 2014 to January 15, 2015
- Prof. **Nelson Maculan**, Federal University of Rio de Janeiro, Brazil, Dec. 6 to 11, 2014
- Prof. **Jinyun Yuan**, Federal University of Parana, Brazil, October 6 to 31, 2014
- Prof. **Luis Roman Lucambio Perez**, Instituto de Matematica e Estatística, Universidade Federal de Goiás, Brazil, from October 1, 2014 to January 31
- Prof. **Christine Ann Shoemaker**, Cornell University, USA, June 28 to July 12, 2014
- Prof. **Zhaosong Lv**, Simon Fraser University, Canada, May 26 to July 6, 2014
- Prof. **Raimundo J. B. de Sampaio**, Pontifical Catholic Univ. of Parana, Brazil November 15, 2013 to February 20, 2014
- Associate Prof. **Orizon Pereira Ferreira**, Universidade Federal de Goiás, Brazil, from November 5, 2013 to January 30, 2014
- Prof. **Zhiquan (Tom) Luo**, Univ. of Minnesota, USA, one month each year from 2006 to 2008

SPECIAL ARTICLES

- Yu-Hong Dai, Xin Liu, Jiawang Nie and Zaiwen Wen, **Preface** (for Special issues of OMS (35:2, 35:4) dedicated to Yaxiang Yuan's 60 birthday), 2020
- Yu-Hong Dai, **Nonlinear Conjugate Gradient Methods**, Wiley Encyclopedia of Operations Research and Management Science, Published Online, Feb 2011, DOI: 10.1002/9780470400531.eorms0183
- Yu-Hong Dai, **An Interview with Roger Fletcher**, 2006

BOOKS

- Yu-Hong Dai and Yaxiang Yuan, *Nonlinear Conjugate Gradient Methods*, Shanghai Scientific and Technical Publishers, Shanghai (in Chinese), 2000

SELECTED SPECIAL ISSUES

- Special topic on optimization and OR, CSAM Transaction on Applied Mathematics (CSAM), to appear, 2020 (with Zhiquan (Tom) Luo and Zhijun Wu)
- Special issues dedicated to Yaxiang Yuan's 60 birthday, Optimization Methods and Software, 35:2, 35:4, 2020 (with Xin Liu, Jiawang Nie and Zaiwen Wen)
- Special issue for MOA2018, Journal of Computational Mathematics, 37:6, 2020 (with Xiaojun Chen, Tamas Terlaky, Wotao Yin)
- Special issue for MOA2016, Journal of Computational Mathematics, 36:3, 2018 (with Xiaojun Chen, Peter Richtarik, Yinyu Ye)
- Special issue for ICIAM2015 (Beijing), Science China Mathematics, 59:8, 2016 (with Zhaojun Bai, Weinan E, Chi-Wang Shu and Pingwen Zhang)
- Data-Driven Optimization Models and Algorithms, Journal of the Operations Research Society of China, 3:4, 2015 (with Yanqin Bai and Naihua Xiu)
- Special issue of The 2nd Sino-German Workshop on Optimization, Modeling, Methods and Applications in Industry and Management, Pacific Journal of Optimization, 10:1, 2014 (with Bingsheng He and Thorsten Koch).
- Special issue of The 5th Sino-Japan Optimization Meeting, Asia-Pacific Journal of Operational Research, 30:3, 2013 (with Wenyun Sun and Tetsuzo Tanino)

- Conjugate Gradient and Quasi-Newton Methods for Nonlinear Optimization, Pacific Journal of Optimization, 2:1, 2006 (with Donghui Li).

OPTIMIZATION SOFTWARE

- **CGOPT** 2.0, a conjugate gradient software for large-scale unconstrained optimization. The main reference is, Yu-Hong Dai and Cai-Xia Kou, A Nonlinear Conjugate Gradient Algorithm with An Optimal Property and An Improved Wolfe Line Search, SIAM Journal on Optimization, 23:1 (2013) pp. 296-320
- **CMIP** 1.6, a mixed integer programming solver based on the branch-and-cut framework. Currently, it has more than sixty thousand lines of code, covering all the basic modules including preprocessing, heuristic, cutting plane, branch, node selection, and domain propagation. With CMIP as a main platform, the group has successfully solved many real problems including pooling problem, steady-state gas network problem, base station location problem, AGV dock distribution problem, heated oil pipeline problem and unit commitment problem in power system. The group won the OR Application Award, which was awarded by the Operations Research Society of China in 2018.
- **BBQ** 1.0, a new gradient method by equipping Barzilai-Borwein method with two-dimensional quadratic termination property. Efficient (projected) gradient algorithms are designed for quadratic optimization, unconstrained optimization, dominant eigenvalues computation, box-constrained optimization and singly linearly box-constrained optimization.

SELECTED PAPERS

1. Y. H. Dai and Y. Yuan (1996), *Convergence Properties of the Fletcher-Reeves Method*, **IMA Journal of Numerical Analysis** 16 (2), pp. 155-164.
2. Y. H. Dai and Y. Yuan (1998), *Convergence Properties of the Beale-Powell Restart Algorithm*, **Science in China (series A)** 41 (11), pp. 1142-1150.
3. Y. H. Dai, J. Han, G. Liu, D. F. Sun, H. Yin, and Y. Yuan (1999), *Convergence Properties of Nonlinear Conjugate Gradient Methods*, **SIAM Journal on Optimization** 10 (2), pp. 345-358.
4. Y. H. Dai and Y. Yuan (1999), *A Nonlinear Conjugate Gradient with A Strong Global Convergence Property*, **SIAM Journal on Optimization** 10 (1), pp. 177-182.
5. Y. H. Dai and Y. Yuan (1999), *Global Convergence of the Method of Shortest Residuals*, **Numerische Mathematik** 83, pp. 581-598.
6. Y. H. Dai and Y. Yuan (2001) *An Efficient Hybrid Conjugate Gradient Method for Unconstrained Optimization*, **Annals of Operations Research** 103, pp. 33-47.
7. Y. H. Dai and Y. Yuan (2001), *A Three-parameter Family of Nonlinear Conjugate Gradient Methods*, **Mathematics of Computation** 70, pp. 1155-1167.
8. Y. H. Dai (2001), *New Properties of A Nonlinear Conjugate Gradient Method*, **Numerische Mathematik** 89 (1), pp. 83-98.
9. Y. H. Dai (2002), *Convergence Properties of the BFGS algorithm*, **SIAM Journal on Optimization**, 13(3), pp. 693-701.
10. Y. H. Dai and L. Z. Liao (2002), *R-Linear Convergence of the Barzilai and Borwein Gradient Method*, **IMA Journal of Numerical Analysis** 22, pp. 1-10.
11. Y. H. Dai and Y. Yuan (2003), *Alternate Minimization Gradient Method*, **IMA Journal of Numerical Analysis**, 23, pp. 377-393.

12. Y. H. Dai, J. M. Martínez, and J. Y. Yuan (2003), *An Increasing-Angle Property of the Conjugate Gradient Method and the Implementation of Large-Scale Minimization Algorithms with Line Searches*, **Numerical Linear Algebra and Applications** 10(4), pp. 323-334.
13. Y. H. Dai (2003), *A Family of Hybrid Conjugate Gradient Methods for Unconstrained Optimization*, **Mathematics of Computation** 72, pp. 1317-1328.
14. Y. H. Dai and R. Fletcher (2005), *Projected Barzilai-Borwein Methods for Large-Scale Box-Constrained Quadratic Programming*, **Numerische Mathematik** 100(1), pp. 21-47.
15. Y. H. Dai and R. Fletcher (2005), *On the Asymptotic Behaviour of Some New Gradient Methods*, **Mathematical Programming, Series A**, 13:3, pp. 541-559.
16. Y. H. Dai, W. W. Hager, K. Schittkowski, H. C. Zhang (2006), *The cyclic Barzilai-Borwein Method for unconstrained optimization*, **IMA Journal of Numerical Analysis** 26(3), pp. 604-627.
17. Y. H. Dai and R. Fletcher (2006), *New Algorithms for Singly Linearly Constrained Quadratic Programs Subject to Lower and Upper Bounds*, **Mathematical Programming, ser. A** 16(3), pp. 403-421.
18. Y. H. Dai (2006), *Fast Algorithms on Projection on an Ellipsoid*, **SIAM Journal on Optimization** 16(4), pp. 986-1006.
19. G. H. Yu, L. Q. Qi and Y. H. Dai (2009), *On Nonmonotone Chambolle Gradient Projection Algorithms for Total Variation Image Restoration*, **Journal of Mathematical Imaging and Vision** 35(2), pp. 143-154.
20. Y. H. Dai (2011), *Nonlinear Conjugate Gradient Methods*, **Wiley Encyclopedia of Operations Research and Management Science**, Published Online, Feb 2011, DOI: 10.1002/9780470400531.eorms0183.
21. Y. F. Liu, Y. H. Dai and Z. Q. Luo (2011), *Coordinated Beamforming for MISO Interference Channel: Complexity Analysis and Efficient Algorithms*, **IEEE Transactions on Signal Processing** 59(3), pp.1142-1157.
22. Y. F. Liu, Y. H. Dai, and Z. Q. Luo (2011), *Max-min fairness linear transceiver design for a multi-user MIMO interference channel*, in: Proc. IEEE International Conference on Communications (ICC), Jun. 2011, pp. 1-5 (Received **Best Paper Award**)
23. Y. H. Dai (2013), *A Perfect Example for the BFGS Method*, **Mathematical Programming, Ser. A** 138(1-2), pp. 501-530.
24. Y. H. Dai and C. X. Kou (2013), *A Nonlinear Conjugate Gradient Algorithm with An Optimal Property and An Improved Wolfe Line Search*, **SIAM Journal on Optimization** 23(1), pp. 296-320.
25. Y. N. Chen, Y. H. Dai, D. R. Han and W. Y. Sun (2013), *Positive Semidefinite Generalized Diffusion Tensor Imaging via Quadratic Semidefinite Programming*, **SIAM Journal on Imaging Sciences** 6(3), pp. 1531-1552.
26. Y. F. Liu, Y. H. Dai, Z. Q. Luo (2013), *Max-Min Fairness Linear Transceiver Design for a Multi-User MIMO Interference Channel*, **IEEE Transactions on Signal Processing** 61(9), pp. 2413-2423.
27. Y. F. Liu, Y. H. Dai, Z. Q. Luo (2013), *Joint Power and Admission Control via Linear Programming Deflation*, **IEEE Transactions on Signal Processing** 61(6), pp. 1327-1338.
28. Y. F. Liu and Y. H. Dai (2014), *On the Complexity of Joint Subcarrier and Power Allocation for Multi-User OFDMA Systems*, **IEEE Transactions on Signal Processing** 62(3), pp. 583-596.
29. C. F. Cui, Y. H. Dai, J. W. Nie (2014), *All Real Eigenvalues of Symmetric Tensors*, **SIAM Journal on Matrix Analysis and Applications** 35(4), pp.1582-1601.

30. B. Jiang and Y. H. Dai (2015), *A Framework of Constraint Preserving Update Schemes for Optimization on Stiefel Manifold*, **Mathematical Programming, Ser. A** 153(2), pp. 535-575.
31. Y.F. Liu, S. Ma, Y.H. Dai and S. Zhang (2016), *A Smoothing SQP Framework for A Class of Composite L_q Minimization over Polyhedron*, **Mathematical Programming, Ser. A** 158, pp. 467-500.
32. Y. N. Chen, Y.H. Dai and D.R. Han (2016), *Fiber Orientation Distribution Estimation Using a Peaceman-Rachford Splitting Method*, **SIAM J. Imaging Sciences** 9(2), pp. 573-604.
33. Y. H. Dai, D. Han, X. Yuan and W. Zhang (2017), *A Sequential Updating Scheme of Lagrange Multiplier for Separable Convex Programming*, **Mathematics of Computation** 86(303), pp. 315-343.
34. R. Diao, Y.F. Liu and Y.H. Dai (2017), *A New Fully Polynomial Time Approximation Scheme for the Interval Subset Sum Problem*, **Journal of Global Optimization** 68(4), pp. 749-775.
35. W.Y. Cheng and Y. H. Dai (2018), *Gradient-based Method with Active Set Strategy for ℓ_1 optimization*, **Mathematics of Computation** 87, pp. 1283-1305.
36. O. Burdakov, Y. H. Dai and N. Huang (2019), *Stabilized Barzilai-Borwein Method*, **Journal of Computational Mathematics**, 37:6, pp. 916-936.
37. Y. H. Dai, X. W. Liu and J. Sun (2020), *A Primal-Dual Interior-Point Method Capable of Rapidly Detecting Infeasibility for Nonlinear Programs*, **Journal of Industrial and Management Optimization** 16(2), pp. 1009-1035.
38. X. W. Liu and Y. H. Dai (2020), *A Globally Convergent Primal-Dual Interior-Point Relaxation Method for Nonlinear Programs*, **Mathematics of Computation** 89(323), pp. 1301-1329.
39. W. Chen and Y. H. Dai (2021), *On the Complexity of Sequentially Lifting Cover Inequalities for the Knapsack Polytope*, **Science China Mathematics** 64(1), pp. 211-220.
40. H. Zhang, L. Guo, Y. H. Dai and W. Peng (2021), *Proximal-Like Incremental Aggregated Gradient Method with Linear Convergence under Bregman Distance Growth Conditions*, **Mathematics of Operations Research**, 46, pp. 61-81.
41. Y. H. Dai and L. W. Zhang (2021), *Optimization with Least Constraint Violation*, **CSI-AM Transactions on Applied Mathematics**, 2, pp. 551-584.
42. Y. Huang, Y. H. Dai and X. W. Liu (2021), *Equipping the Barzilai-Borwein Method with the Two-Dimensional Quadratic Termination Property*, **SIAM Journal on Optimization**, 31:4, pp. 3068-2096.
43. J.W. Chen, Y.H. Dai (2022), *Multiobjective Optimization with Least Constraint Violation: Optimality Conditions and Exact Penalization*, **Journal of Global Optimization**, <https://doi.org/10.1007/s10898-022-01158-8>.
44. X.X. Ju, C.D. Li, Y.H. Dai and J.W. Chen (2022), *A New Dynamical System with Self-adaptive Dynamical Stepsize for Pseudomonotone Mixed Variational Inequalities*, **Optimization**, DOI: 10.1080/02331934.2022.2094795.
45. Z.W. Chen, Y.H. Dai, T.Y. Zhang (2022), *A Line Search Penalty-free SQP Method for Equality-constrained Optimization without Maratos Effect*, **IMA Journal of Numerical Analysis**. (2022) 00, 1–32.
46. Y.H. Dai, L.W. Zhang (2022), *The Augmented Lagrangian Method Can Approximately Solve Convex Optimization with Least Constraint Violation*, **Mathematical Programming**, <https://doi.org/10.1007/s10107-022-01843-2>.
47. J. Gao, X.W. Liu, Y.H. Dai, Yakui Huang and Peng Yang (2022), *Achieving Geometric Convergence for Distributed Optimization with Barzilai-Borwein Step Sizes*, **SCIENCE CHINA: Information Sciences**, (2022)65 149204:1–149204:2.

48. Y.K. Huang, Y.H. Dai, X.W. Liu, Hongchao Zhang (2022), *On the Acceleration of The Barzilai–Borwein Method*, **Computational Optimization and Applications**, <https://doi.org/10.1007/s10589-022-00349-z>.
49. Y.K. Huang, Y.H. Dai, X.W. Liu, Hongchao Zhang (2022), *On The Asymptotic Convergence and Acceleration of Gradient Methods*, **Journal of Scientific Computing**, <https://doi.org/10.1007/s10915-021-01685-8>.
50. X.W. Liu, Y.H. Dai, Y.K. Huang (2022), *A Primal-Dual Interior-Point Relaxation Method with Global and Rapidly Local Convergence for Nonlinear Programs*, **Mathematical Methods of Operations Research**, <https://doi.org/10.1007/s00186-022-00797-7>.
51. T.T. Yu, X.W. Liu, Y.H. Dai (2022), J. Sun, *A Mini-Batch Proximal Stochastic Recursive Gradient Algorithm with Diagonal Barzilai–Borwein Stepsize*, **Journal of the Operations Research Society of China**, <https://doi.org/10.1007/s40305-022-00436-2>.
52. L. Chen, Y.H. Dai, Z. Wei (2022), *Sufficient Conditions for Existence of Global Minimizers of Functionson Hilbert Spaces*, **Journal of Global Optimization**, <https://doi.org/10.1007/s10898-022-01133-3>.