Antonio Mucherino's
curriculum vitæ

Personal

Antonio Mucherino (born in 1978)
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Web: www.antoniomucherino.it

Job history and experiences

Current position (since Sep 2011):

- **Associate Professor**[1] at IRISA, University of Rennes 1, Rennes, France.

Previous positions:

- **Postdoc Researcher**, *from Sep 2006 to Aug 2011*, in inverse chronological order

time	*where*	*advisor(s)*
9 months	CERFACS, Toulouse	Serge Gratton, Iain Duff
1 year	INRIA Lille	El-Ghazali Talbi
1.5 years	LIX, École Polytechnique, Palaiseau	Carlile Lavor, Leo Liberti
9 months	IFAS, University of Florida	Petraq Papajorgji
6 months	CAO, University of Florida	Panos Pardalos

- **Junior Researcher** (during PhD), *from Nov 2001 to Dec 2005*

time	*where*	*advisor*
10 months	ISA-CNR, Avellino	Angelo Facchiano
10 months	Giovanni Pascale Foundation, Naples	Giovanni Colonna

- **Trainee** (before PhD)

time	*where*	*advisor*
3 months	ICAR-CNR, Naples	Marco D'Apuzzo

[1] Equivalent in France to *Maître de Conférences* with *Habilitation à Diriger des Recherches* (HDR).

Education

- *July 2018*
  Habilitation à Diriger des Recherche (HDR),
  University of Rennes 1, France.
  HDR Monograph title: *On the Discretization of Distance Geometry: Theory, Algorithms and Applications.*
  Awarded on: July 17th, 2018. President of the committee: Kadi Bouatouch.

- *Since 2009*
  On the **Qualification Lists** for "Maître de Conférences",
  French National University Council (CNU), Section: 27 (computer science).

- *Nov 2001 - Dec 2005*
  PhD in Computational Biology,
  Department of Mathematics, Second University of Naples, Italy.
  Thesis title: *Geometric Aspects in the Simulation of Protein Folding Processes.*
  Awarded on: December 13th, 2005. Supervisor: Marco D'Apuzzo.

- *Sep 1997 - Oct 2001*
  Master in Mathematical Sciences,
  Department of Mathematics, Second University of Naples, Italy.
  Thesis title: *Quadratic Optimization: Algorithms and Software for Dense Problems.*
  Awarded on: October 30th, 2001. Supervisor: Marco D'Apuzzo.

Research interests

- Distance Geometry
- Bioinformatics
- Meta-Heuristics
- Data Mining
- Parallel Computing

Details about my research activities can be found on my webpage: `https://www.antoniomucherino.it/en/research.php`

Teaching

Only information about the classes I am currently teaching are reported below.
More details about all courses I have given, as well as some didactic material, can be found at the address: `http://www.antoniomucherino.it/en/teaching.html`

Quite recently, I've set up a GitHub repository for depositing some of my didactic material, mainly code: `https://github.com/mucherino/teaching`

1. **High Performance Computing** (in French).
   ESIR Engineering school level 3, University of Rennes.
   Academic year 2023/24, first semester, level M2 (M.Sc).

2. **Concurrent Programming and Operating Systems** (in French).
   Master in Informatics, University of Rennes.
   Academic year 2023/24, first semester, level M1 (M.Sc).

3. **An Introduction to Object Oriented Programming** (in French).
   Bachelor of Science in Informatics, University of Rennes.
   Academic year 2023/24, first semester, level L2 (B.Sc).

4. **Advanced Programming** (in English).
   `eit Digital` Master School, Master in Informatics, University of Rennes.
   Academic year 2023/24, second semester, level M1 (M.Sc).

5. **Parallel Computing** (in French).
   `eit Digital` Master School, Master in Informatics, University of Rennes 1.
   Academic year 2023/24, second semester, level M1 (M.Sc).

In March 2018, I gave a lecture on *distance geometry and applications* to a group of Master students of the Department of Mathematics of UFSC (Florianópolis, Santa Catarina, Brazil).

Previous courses were given at University of Rennes 1 (since academic year 2011-12), at the École Polytechnique in Palaiseau (France) and at the Second University of Naples (Italy).

Projects

Awarded Grants

1. *Multi-Representation Bio-Molecular Structure Determination by Geometric Approaches*, ITINERANCE collaboration project with the LPCT (UMR 7019, biochemistry lab) located in Nancy and Metz. Source: CNRS. Funding: 10kEUR in 2023, 10kEUR in 2024, and renewable for a third year.

2. *Multi-Scale and Multi-Resolution Bio-Molecular Structure Determination by Geometric Approaches* (multi-BioStruct), ANR's PRCI in collaboration with Taiwan, with 3 partners in France and 2 partners in Taiwan. Source: ANR and MoST, 546.8 kEUR, 2020–2024 (4 years + 6 month extension because of covid-19 pandemic). On September 18th, 2023, Jung-Hsin Lin (PI in Taiwan) and myself, we were invited to give an invited joint talk about our collaboration at CNRS Headquarters in Paris, in occasion of an event celebrating the 30 years of collaboration between CNRS and NSCT (previously named MoST).

3. *Rapid NMR Protein Structure Determination and Conformational Transition Sampling by a Novel Geometrical Approach*. International cooperation between IRISA and Academia Sinica (Taipei, Taiwan). Source: CNRS-MoST, 5kEUR per year, 2018–19.

4. *The Special Role of Topology in the Analysis and the Simulation of Human Behaviors*. Temporary part-time job as an INRIA researcher (délégation INRIA). Source: INRIA Rennes, 8kEUR per year, 2016–2017.

5. *On the Generalization of the Distance Geometry and its Applications*. Interdisciplinary research. Source: INS2I/CNRS, 7kEUR, 2016.

6. *Distance Geometry and Applications*. International cooperation between University of Rennes 1 and Brazilian partners. Source: University of Rennes 1, 2kEUR per year. Awarded every year from 2012 to 2016.

7. *Distance Geometry and Answer Set Programming*. 1-year postdoc at University of Rennes 1. Source: Brittany Region, 33kEUR (75% of total cost), 2013.

8. *Discretizable Molecular Distance Geometry Problem and Protein Docking Problem.* 2-month visit (*chaire*) to UNICAMP (São Paulo, Brazil) for myself. Source: UNICAMP and French Embassy in São Paulo, 20k Brazilian Reais (BRL), 2012.

9. *Wine Fermentation Analysis by Biclustering.* International cooperation between IRISA and the Universidad Técnica Federico Santa Maria, Valparaíso, Chile. Source: CNRS-CONICYT, 4kEUR, 2012.

10. *A Discrete Approach to the Molecular Docking Problem.* 1-month visit to University of Rennes 1 for C. Lavor. Source: ISTIC, University of Rennes 1, 3kEUR, 2012.

Participation

11. *Approaches for Exploration of the Geometric Conformational Space of Proteins*, CNRS-IRP project between the CNRS in France and the Academia Sinica of Taipei (Taiwan). Leading partner in France is the LPCT (UMR 7019), in collaboration with IRISA in Rennes.

12. *Discretizable Distance Geometry Problem: Applications to Proteins & Motion Adaptation*, CAPES-PRINT project 88887.578009/2020-00. Source: CAPES agency in Brazil (Santa Catarina state), 13790 BRL, 2019–21.

13. *Modelling Human Motion for Synthesis and Recognition with Deep Learning on Surface Features.* Royal Society International Exchanges. Source: UK's Royal Society, 12kGBP, 2019-20 (extended until November 2021 because of the covid-19 pandemic).

14. *An Interval Branch-and-Prune Approach for Obtaining Intrinsically Disordered Protein Conformations*, "Infinity" interdisciplinary projects, CNRS, 2018-19.

15. *Geometria de distâncias aplicada ao Cálculo de Estruturas 3D de Proteínas*, UNIVERSAL CNPq project, 2014.

16. *Bayesian inference paradigm: Biology in processors* (Bip:Bip), ANR project, 2012–2017.

17. *Combinatorial Methods to Calculate Protein Structures by Using NMR Data*, State of São Paulo Research Foundation - FAPESP, 2009–2011.

18. *Innovative Problems and Methods in Nonlinear Optimization*, PRIN Project, Italian Ministry of University and Research (MIUR), 2005–2007.

19. *Computational Procedures for Simulating Protein Folding Processes*, Italian Region *Campania* (L.R. n.5 28/3/2002), 2005–2006.

Organization activities

Organization of Scientific Events

- chair of
  - Distance Geometry Day (DGD16), at IRISA/INRIA Rennes, on December 7, 2016.

    `http://www.antoniomucherino.it/events/DGD16/`

    Invitation-based scientific program.
- co-chair of
  - Workshop on Computational Optimization (WCO*), in the framework of the Federated Conference on Computer Science and Information Systems (FedCSIS):

https://fedcsis.org/wco

Co-chairing with D. Zaharie and S. Fidanova since 2012 edition. Workshop held every year. Since the edition 2023, our workshop is integrating among the thematic tracks of the main FedCSIS conference, hence losing the word "workshop" from its title.

- Mini-symposium on Sensor Network Localization and Dynamical Distance Geometry, at Fields Institute, Toronto (Canada), on May 17-19, 2021:

  http://www.fields.utoronto.ca/activities/20-21/constraint-sensor

  Co-charing with H. Wolkowicz.

- DIMACS Workshop on Optimization in Distance Geometry, at DIMACS Center, Rutgers University (USA), on June 26–28, 2019:

  http://dimacs.rutgers.edu/events/details?eID=322

  Co-chairing with N. Krislock and C. Lavor.

- international advisory committee member for
  - International Conference on Mathematical Methods in Economics (MME24), It will be Held in Ústí nad Labem (Czech Republic) in September 2024.
  - International Conference on the Dynamics of Information Systems (DISx), with $x = 23$ and 24 (up to now). Held in Prague (Czech Republic) in 2023; it will be held in Kalamata, Greece, in July 2024.
  - Geometric Science of Information (GSIx), with $x = 17$ to 23, every 2 years in European summer time. Held in Paris, Toulouse, and St. Malo (last edition).
  - International Conference on Algebra, Number Theory and Discrete Geometry (dedicated to the 80th anniversary of M. Deza birth), TSPU of Leo Tolstoy, Tula, Russia, May 2019.
  - International Conference on BioInformatics and BioEngineering (BIBE18), Taichung, Taiwan, October 2018.
  - Many Faces of Distances (MFD14), Campinas, São Paulo, Brazil, October 2014.
  - Distance Geometry and Applications (DGA13), Manaus, Amazonas, Brazil, June 2013.
  - Data Mining in Agriculture (DMAx), with $x = 11$, 12 and 13, in the framework of the "Industrial Conference on Data Mining" (ICDMx).
- session organizer in
  - GSI23, St. Malo, France, August 30 / September 1, 2023.
  - Roadef23, Rennes, France, February 20–23, 2023 (with J. Omer).
  - GSI17, Paris, France, November 7–9, 2017 (with D. Gonçalves).
  - IFORS14, Barcelona, Spain, July 13–18, 2014 (with N. Maculan).
  - ICCOPT13, Lisbon, Portugal, July 27 – August 1, 2013 (with C. Lavor).
  - ISMP12, Berlin, Germany, August 19–24, 2012 (with N. Maculan).
- local organizing committee member for
  - TOGO10, Toulouse, France, August 31 – September 3, 2010.
  - CTW09, Paris, France, June 2–4, 2009.
- local events
  - MimeTIC's Classification Days (CDs), four editions between 2016 and 2017.

    http://www.antoniomucherino.it/events/CDs/

Reviewing tasks

- refereed papers for:
  - SIMAX (SIAM);
  - JOGO, OPTL, JOTA, JOCO, COAP, MATR A and B, ORIJ, ANOR, NCAA, PLSO, AACA, PAAA, SOCO, SpringerPlus (Springer);
  - DAM, INS, CAM, CAMWA, PRLetters, COMPAG, JBIOTEC, CBAC, CACE, INDAG, GVC, JPDC, IJEPES, JCMDS (Elsevier);
  - GOMS (Taylor & Francis);
  - ITOR, MMA, TGIS (Wiley);
  - TPDS, NET (IEEE);
  - JCIM, TOMM (ACM);
  - OJMO (*open journal*)
  - IJNS (World Scientific);
  - IJMHEUR (Inderscience);
  - OJDM (Scientific Research, an Academic Publisher);
  - Biology, Symmetry, Sensors, Applied Sciences (MDPI);
  - Fundamenta Informaticae, Integrated Computer-Aided Engineering (IOS Press);
  - Engineering Computations (Emerald Publishing).
- reviewer for several conferences, not only those for which I'm part of the scientific committee;
- reviewer for Springer books;
- reviewer of projects for the European Research Council (ERC);
- reviewer of projects for INRIA team international partnerships.

International Relationships

I was the coordinator of the International Relationships at ISTIC, University of Rennes 1, from September 2013 to August 2022. I was member of the *Commission Affaires Internationales* (CAI) at University of Rennes 1 during the same period. This position gave me the possibility to establish some new international cooperations for student mobility at Master level with several partners in Europe, and one main partner in the American continent: the University of Laval, Québec, Canada.

Conferences and Workshops with contribution

Only conference and workshop acronyms and a few more details are provided in the following list.
More information can be found at: `http://www.antoniomucherino.it/en/conferences.html`

- ISGC24, Taipei, Taiwan. March 24–29, 2024.
- DIS23, Prague, Czech Republic, September 3–6, 2023.
- GSI23, Saint Malo, France. August 30 / September 1, 2023.
- Fields Workshop, Toronto, Canada. August 8–11, 2023. [**invited speaker**]

- IWBBIO23, Gran Canaria, Spain. July 12–14, 2023.
- LSSC23, Sozopol, Bulgaria. June 5–9, 2023.
- EOSBF23, Ouro Preto (MG), Brazil. May 21–25, 2023.
- ISGC23, Taipei, Taiwan. March 19–24, 2023.
- ROADEF23, Rennes, France. February 20–23, 2023.
- CLAIO22, Buenos Aires, Argentina. December 12–15, 2022.
- AIMaViG22 and WCO22, FedCSIS22. September 4–7, 2022.
- CSGT22, Prague, Czech Republic. July 25–29, 2022.
- DMD22, Santander, Spain. July 4–6. 2022.
- IWBBIO22, Gran Canaria, Spain. June 27–30. 2022.
- EOSBF22, São Paulo (SP), Brazil. April 10–14, 2022.
- CSBW21, BIBM21, online event, December 9–12, 2021.
- WCO21, FedCSIS21, online event, September 2–5, 2021.
- LSSC21, Sozopol, Bulgaria (partially held online). June 7–11, 2021.
- BPS21, online. February 22–26, 2021.
- WCO20, FedCSIS20, online event. September 6–9, 2020.
- MIG19, Newcastle, UK. October 28–30, 2019.
- WCO19, FedCSIS19, Leipzig, Germany. September 1–4, 2019.
- 80th birthday of Michel Deza, Tula, Russia, May 13–18, 2019.
- IWBBIO19, Granada, Spain. May 8–10, 2019.
- MIG18, Cyprus, Greece. November 8–10, 2018.
- WCO18, FedCSIS18, Poznan, Poland. September 9–12, 2018.
- NMR_Theory_and_Methods, Campinas, São Paulo, Brazil. May 21–22, 2018. [**invited speaker**]
- GOR-DG17, Bad Honnef, Germany. November 23–24, 2018. [**invited speaker**]
- MIG17, Barcelona, Spain. November 8–10, 2017.
- GSI17, Paris, France. November 7–9, 2017.
- IGRV17, Rennes, France. October 23–27, 2017.
- WCO17, FedCSIS17, Prague, Czech Republic, September 3–6, 2017.
- ROADEF17, Metz, France. February 22–24, 2017.
- WCO16, FedCSIS16, Gdansk, Poland. September 11–14, 2016.
- AIMSA16, Varna, Bulgaria. September 7–9, 2016.
- WCO15, FedCSIS15, Lodz, Poland. September 13–16, 2015.
- LSSC15, Sozopol, Bulgaria. June 8–12, 2015.
- IWBBIO15, Granada, Spain. April 15–17, 2015.
- ROADEF15, Marseille, France. February 25–27, 2015.
- MFD14, Campinas, São Paulo, Brazil. October 22–24, 2014 (*two contributions*).

- WCO14, FedCSIS14, Warsaw, Poland. September 7–10, 2014.
- IFORS14, Barcelona, Spain. July 13–18, 2014.
- Uncertainties14, Rouen, France. June 23–27, 2014.
- INFORMS13, Minneapolis, USA. October 6–9, 2013 (*two contributions*).
- WCO13, FedCSIS13, Krakov, Poland. September 8–11, 2013.
- GSI13, Paris, France. August 28–30, 2013.
- ICCOPT13, Lisbon, Portugal. June 27 – August 1, 2013.
- DGA13, Manaus, Amazonas, Brazil. June 24–27, 2013. [**invited speaker**]
- IWBBIO13, Granada, Spain. March 18–20, 2013.
- Computational Biomedicine, Gainesville, Florida, USA. January 24–26, 2013.
- Ottawa Symposium on Biochemistry & Biophysics, Ottawa, USA. October 24–25, 2012.
- INFORMS12, Phoenix, USA. October 14–17, 2012.
- CLAIO12, Rio de Janeiro, Brazil, September 24–28, 2012.
- WCO12, FedCSIS12, Wroclaw, Poland, September 9–12, 2012.
- ISMP12, Berlin, Germany, August 19–24, 2012 (*two contributions*).
- ICMRBS12, Lyon, France, August 19–24, 2012.
- 2012 SIAM Annual Meeting, Minneapolis, Minnesota, USA, July 9–13, 2012.
- MDA12, Varna, Bulgaria, July 2–5, 2012.
- GOW12, Natal, Brazil, June 26–29, 2012.
- PCO12, IPDPS12, Shanghai, China, May 21–25, 2012.
- ROADEF12, Angers, France, April 11–13, 2012.
- br.BIO.fr 2012, Paris, France, March 21, 2012.
- CSBW11, BIBM11, Atlanta, GA, USA, November 12–15, 2011.
- WCO11, FedCSIS11, Szczecin, Poland, September 18–21, 2011.
- MAS11, Rome, Italy, September 12–14, 2011.
- DMA11, ICDM11, New York City, USA, September 2, 2011.
- COCOA11, Zhangjiajie, China, August 4–6, 2011.
- IFORS11, Melbourne, Australia, July 10–15, 2011.
- WCGO11, Crete, Greece, July 3–7, 2011 (*two contributions*).
- CTW11, Frascati, Rome, June 14–16, 2011 (*two contributions*).
- LSSC11, Sozopol, Bulgaria, June 6–10, 2011.
- ISBRA11, Changsha, China, May 27–29, 2011.
- SEA11, Crete, Greece, May 5–7, 2011.
- ROADEF11, Saint Etienne, France, March 2–4, 2011.
- IWCP10, BIBM11, Hong Kong, December 18–21, 2010.
- META10, Djerba, Tunisia, October 27–31, 2010.
- ICMS10, Kobe, Japan, September 13–17, 2010.
- TOGO10, Toulouse, France, August 31 – September 3, 2010.

- DMA10, ICDM10, Berlin, Germany, July 14, 2010.
- EURO10, Lisbon, Portugal, July 11–14, 2010.
- DMBIO10, Crete, Greece, July 7–9, 2010.
- EU/MEeting 2010, Lorient, France, June 2–4, 2010.
- AICCSA10, Hammamet, Tunisia, May 16–19, 2010.
- Grid5000 Spring School 2010, Lille, France, April 6–9, 2010.
- ROADEF10, Toulouse, France, February 24–26, 2010.
- CSBW09, BIBM09, Washington D.C., USA, November 1–4, 2009.
- ICBB09, Venice, Italy, October 28–30, 2009.
- WCO09, IMCSIT09, Mragowo, Poland, October 12–14, 2009.
- IFIP09, Buenos Aires, Argentina, July 27–31, 2009.
- GECCO09, Montréal, Canada, July 8–12, 2009.
- Engineering Systems Symposium at MIT, Cambridge, Massachusetts, USA, June 15–17, 2009.
- CTW09, Paris, France, June 2–4, 2009.
- FAME09, Orlando, Florida, USA, May 14–17, 2009.
- SAC09, Honolulu, Hawaii, USA, March 8–12, 2009.
- ROADEF09, Nancy, France, February 10–12, 2009.
- BBCC08, Avellino, Italy, December 12, 2008.
- Workshop "Journée Optimeo", Université Paris-Sud XI, Orsay, France, November 21, 2008.
- ARS Workshop, École Polytechnique, Palaiseau, France, October 31, 2008.
- CCO08, Gainesville, Florida, USA, January 30 – February 1, 2008.
- Protein Folding Workshop, Minneapolis, USA, January 14–18, 2008.
- Biomedicine07, Gainesville, Florida, USA, March 28–30, 2007.
- BBCC06, Avellino, Italy, December 18, 2006.
- Biomedicine05, Gainesville, Florida, USA, February 2–4, 2005.
- CMS04, Neuchatel, Switzerland, April 2–5, 2004.
- Unravelling Nature's Networks, Sheffield, England, July 20–22, 2003.

Visiting Terms and Seminars

My active collaboration with partners in Taiwan (ANR project MULTIBIOSTRUCT, CNRS-IRP project) gives me the possibility to visit Taipei rather frequently. This is the list of short terms and seminars at Academia Sinica in recent times:

2024 10 days at RCAS and NBRP (with participation to the ISGC24 conference);
2023 2 weeks at RCAS and NBRP (with participation to the ISGC23 conference);
2019 2 weeks at RCAS (CNRS-MoST project);
2018 3 weeks at RCAS (CNRS-MoST project, time split over 2 visits);
2017 10 days at RCAS (invited by J-H. Lin, 1 seminar).

My active collaboration with several Brazilian colleagues, working at different Universities in Brazil, encouraged

the organization of several travels to this beautiful country. This is the reason why you can find below a dedicated list of travels and activities in Brazil:

2023 1 week at UFSC, and 1 week in Ouro Preto (EOSBF23 conference);
2021 2 weeks at UFSC (CAPES-PRINT project);
2019 2 weeks at UNICAMP;
2018 12 days at UFSC; 7 days at UNICAMP (NMR workshop);
2017 7 days at UNICAMP;
2016 10 days at UFSC; 14 days at UNICAMP (2 visits);
2015 7 days at UFSC (1 seminar);
2014 5 days at UNICAMP (MFD workshop);
2013 7 days at UFRJ; 7 days at UNICAMP;
2012 2 month *chaire* at UNICAMP (1 seminar);
2011 10 days at UNICAMP; 2 weeks at UFRJ (1 seminar);
2010 2 weeks at UNICAMP (1 seminar);
2009 7 days at UFRJ.

Colleagues and visited Brazilian Universities:

- COPPE, UFRJ, Rio de Janeiro, Nelson Macular (Professor Emerito);
- IMECC, UNICAMP, Campinas (São Paulo), Carlile Lavor (Full Professor);
- DM, UFSC, Florianópolis (Santa Catarina), Douglas Gonçalves (Assistant Professor).

From 2023, in the framework of our CNRS-ITINERANCE project, I'm often visiting the LPCT in Nancy and Metz. These are mainly short visits organized to work closely with the colleagues of the LPCT. I omit to report the details of these trips.

Finally, this is my *generic* list of visiting terms and seminars (not including what already reported above):

- INRIA LORIA Nancy, France. 1 seminar. Invited by Y. Guermeur. December 2023.
- Department of Computer Science, Utrecht University, Utrecht, Netherlands. 6 days, 1 seminar. Invited by T. Miltzow. April 2022.
- Laboratoire des Sciences du Numérique, Nantes, 1 seminar. Invited by J. Idier. September 2020.
- School of Informations and Telecommunications, University of Granada, Spain. 4 days, 1 seminar. Invited by D. Pelta. May 2019.
- Institut Pasteur, Paris, France. 1 seminar. Invited by T. Malliavin. CNRS Infinity project. June 2018.
- Department of Control Systems and Mechatronics, Wroclaw University of Science and Technology, 3 days, 1 seminar. Invited by P. Drag. March 2018.
- IFSTTAR, Paris, France. 1 seminar. Invited by E. Dumont. November 2017.
- Institute of Computer Technology, TU Vienna, Austria. 3 days, 1 seminar. Invited by N. TaheriNejad. April 2017.
- Laboratoire d'Informatique, Université d'Avignon, Avignon, France. 3 days, 1 seminar. Invited by R. Figueiredo. November 2016.
- INSA, Rennes, France. 1 seminar. Invited by M. Haddou. June 2016.
- Institut für Informatik, Universität Potsdam, Germany. 4 days, 1 seminar. Invited by T. Schaub. April 2016.
- Universidade de Aveiro, Portugal. 4 days, 1 seminar. Invited by A. Agra. May 2015.
- BAS, Sofia, Bulgaria. 3 days, 1 seminar. Invited by S. Fidanova. June 2014.
- ENSTA Bretagne, Brest, France. 1 seminar. Invited by J. Ninin. December 2013.

- Department of Informatics, UNIFI, Florence, Italy. 1 seminar. Invited by F. Schoen. December 2012.
- Universidad Técnica Federico Santa Maria, Valparaíso, Chile. 2 weeks. Invited by A. Urtubia. CNRS-CONICYT project. November 2012.
- BIA, INRA, Toulouse, France. 1 seminar. Invited by M. Vignes. March 2012.
- Universidad Técnica Federico Santa Maria, Valparaíso, Chile. 7 days, 2 seminars. Invited by A. Urtubia. July 2011.
- LIPN, Université Paris 13, Paris, France. 1 seminar. Invited by R.W. Calvo. April 2011.
- LIRMM, Université Montpellier 2, Montpellier, France. 1 seminar. Invited by O. Gascuel. April 2011.
- IRIT, Toulouse, France. 1 seminar. Invited by F. Messine. April 2011.
- LAMIH, Université de Valenciennes, Valenciennes, France. 1 seminar. Invited by S. Hanafi. March 2011.
- CERFACS, Toulouse, France. 1 seminar. Invited by I. Duff. June 2010.
- LRI, Université Paris 11, Orsay, France. 1 seminar. Invited by Ch. Froidevaux. April 2010.
- Département de Mathématiques et d'Informatique, Université de Reims Champagne-Ardenne, Reims, France. 1 seminar. Invited by M. Krajecki. April 2010.
- LIPADE, Université Paris Descartes, Paris, France. 1 seminar. Invited by M. Nadif. April 2010.
- ENSEEIHT, Toulouse, France. 1 seminar. Invited by P.R. Amestoy. March 2010.
- IRISA, Rennes, France. 1 seminar. Invited by R. Andonov. December 2009.
- Université Paris 11, Orsay, France. 1 seminar. Invited by A. Lisser. April 2009.
- LAMSADE, Université Paris Dauphine, Paris, France. 1 seminar. Invited by A.R. Mahjoub. March 2009.
- CIRM, Marseille, France. Invited by M. Hirschowitz. March 2009.
- DIIGA, Università Politecnica delle Marche, Ancona, Italy. 1 seminar. Invited by F. Marinelli. February 2009.
- Department of Industrial Engineering, University of Florida, Gainesville, USA. 1 seminar. Invited by P.M. Pardalos. January 2007.
- IASI-CNR, Rome, Italy. 1 seminar. Invited by M. Sciandrone. September 2003.

Supervisions

Supervision of postdoc students

- Warley Gramacho, from September 2015 to August 2016.
- Douglas Soares Gonçalves, from April 2013 to March 2014.
- Andrea Cassioli, with L. Liberti (École Polytechnique), from October 2012 to December 2013.

Supervision of PhD students

- Simon Benjamin Hengeveld, University of Rennes 1 and IRISA, defended on February 2024.
- Virginia Silva Da Costa, with N. Maculan (Federal University of Rio de Janeiro), defended in 2013.
- Warley Gramacho, with C. Lavor (UNICAMP), defended in 2013.

Supervision of visiting PhD students

- Rafael Santos Alves, PhD student from UNICAMP, Campinas, São Paulo, Brazil, 4 months, 2012.
- Maria Cristina De Cola, PhD student from IASI, CNR, Rome, Italy, 3 months, 2012.

Supervision of Master students (over a 6-month period)

- Florestan De Moor, ENS Rennes, 2019 (with D. Frey).
- Pierre Le Luron, University of Rennes 1, 2018 (with S. Collange).
- Florian Elain, INSA Rennes, 2017 (with L. Hoyet and R. Kulpa).
- Antonin Bernardin, University of Limoges, 2017 (with L. Hoyet).
- Thiruvikkiraman Pandurangan, `eit` Digital, University of Rennes 1, 2016.
- Ivaylo Petrov, IRISA Master Research, University of Rennes 1, 2014.
- Giovanni Cicia, Second University of Naples, 2006 (with M. D'Apuzzo).
- Enrico Raimondo, Second University of Naples, 2004 (with M. D'Apuzzo).
- Matilde Muto, Second University of Naples, 2003 (with M. D'Apuzzo).

Supervision of undergraduate students

- Ariane Postel, University of Rennes 1, Bachelor first year, 2016.

Committees

HDR level

- President of the committee for the HDR defense of Jérémy Omer, INSA, Rennes, France. February 24th, 2023.

PhD level

- PhD defense and reviewer of the monograph of Sammy Khalife, LIX, École Polytechnique, Palaiseau, France. August 31st, 2020.
- PhD follower committee, Othman Toujier, INSA Rennes, Rennes, years 2018–19 (in French, *comité de suivi individuel doctorant*).
- PhD qualification, Julie Laniau, University of Rennes 1, Rennes, France, October 1st, 2015.
- PhD defense, Germano Abud de Rezende, UNICAMP, Campinas, São Paulo, Brazil, August 28th, 2014.
- PhD defense, Virginia Silva Da Costa, UFRJ, Rio de Janeiro, Brazil, February 21st, 2013.
- PhD defense, Rafael Santos Alves, UNICAMP, Campinas, São Paulo, Brazil, February 25th, 2013.

Master level

- Master committee member for the `eit Digital` Master School (level 1), as well as for other two Master 1 programs at University of Rennes 1. Since academic year 2019–20.
- Master thesis defense, Master BIG, SVE, University of Rennes 1, Rennes, France, June 20th, 2014.

Computer-related skills

- Programming Languages: C, C++, Java, Scala, jUnit, Fortran 77/90, javascript, PHP, Matlab, Python.
- Operating Systems: UNIX, Linux, Windows.
- Linear Algebra Packages: BLAS, LAPACK.
- Optimization Systems and Software: CPLEX, AMPL and others, both commercial and free.
- Parallel Computing Packages: OpenMP, MPI, SCALAPACK, CUDA.

Developed software

DistanceGeometry (**GitHub repository:** `https://github.com/mucherino/DistanceGeometry`)

This is a recent repository (opened at the beginning of 2023) that aims at collecting various software tools developed in the context of distance geometry and related disciplines. The very first tool that is deposited in this repository is the Java program named *javaCMP* that implements some basic functions related to the newly introduced *Coherent Multi-representation Problem*. This problem was recently proven to be an extension of the "traditional" Distance Geometry Problem (DGP) [45].

In the near future, instead of creating new repositories for each new software project, new directories will be added to this unique repository, for the final users to have an easier access to all developed tools.

MD–jeep (**GitHub repository:** `https://github.com/mucherino/mdjeep`)

This is an implementation in C of the Branch & Prune (BP) algorithm for solving discretizable DGPs [17, 20, 22]. MD-jeep is the result of a strong collaboration among myself, Leo Liberti, Carlile Lavor, Douglas Gonçalves, Jung-Hsin Lin, Nelson Maculan, and other people. The details regarding the discretization of the DGP and the BP algorithm can be found in our publications. MD-jeep is distributed under the GNU General Public Licence (v.3), and it is available on GitHub since the version 0.3.0. Details about the first release of MD-jeep can be found in [77]. Details about the latest releases can be found in [51,53,54]. Thanks to the feedback received from various students and colleagues, quite a few fixes were recently pushed on the repository. A new version of MD-jeep is currently under development.

binMeta (**GitHub repository:** `https://github.com/mucherino/binMeta`)

This Java project intends collecting, in one unique Java package, several meta-heuristic searches that have been proposed over the last years for the solution of combinatorial optimization problems. This project has actually started as a simple student project, but it has subsequently grown to a more important project, where two commits in particular are related to recent advances published in conference proceedings [43,48].

Other software

- A tool for feature selection that is based on consistent biclustering [94]. This tool is written in AMPL and invokes CPLEX for the solution of the inner problem arising in our bilevel reformulation [130], which is linear. The tool can be made available upon request.
- An implementation in C programming language of the Monkey Search Meta-Heuristic. This implementation can be made available upon request.

Languages

- Italian: mother tongue.
- English: excellent spoken and written.
- French: good spoken and written.

Publications

International journals

1. G. Abud, J. Alencar, C. Lavor, L. Liberti, A. Mucherino, *An Impossible Combinatorial Counting Method in Distance Geometry*, to appear in Discrete Applied Mathematics, March 2024.

2. D. Förster, J. Idier, L. Liberti, A. Mucherino, JH. Lin, T.E. Malliavin, *Low-Resolution Description of the Conformational Space for Intrinsically Disordered Proteins*, Scientific Reports **12**, 19057, 16 pages, 2022.

3. S. Hengeveld, N. Rubiano da Silva, D.S. Gonçalves, P.H. Souto Ribeiro, A. Mucherino, *An Optical Processor for Matrix-by-Vector Multiplication: an Application to the Distance Geometry Problem in 1D*, Journal of Optics **24**(1), 015701, 2022. Preliminary version deposited on arXiv:2105.12118v1 in May 2021.

4. J. Omer, A. Mucherino, *The Referenced Vertex Ordering Problem: Theory, Applications, and Solution Methods*, Open Journal of Mathematical Optimization **2**, article no. 6, 29 pages, 2021. Preliminary version deposited on HAL open archives (hal-02509522, version 1) in March 2020.

5. C. Lavor, M.F. de Souza, L.M. Carvalho, D.S. Gonçalves, A. Mucherino, *Improving the Sampling Process in the Interval Branch-and-Prune Algorithm for the Discretizable Molecular Distance Geometry Problem*, Applied Mathematics and Computation **389**(15), 125586, 2021.

6. G. Abud, J. Alencar, C. Lavor, L. Liberti, A. Mucherino, *The K-discretization and K-incident Graphs for Discretizable Distance Geometry*, Optimization Letters **14**(2), 469–482, 2020.

7. A. Mucherino, J. Omer, L. Hoyet, P. Robuffo Giordano, F. Multon, *An Application-based Characterization of dynamical Distance Geometry Problems*, Optimization Letters **14**(2), 493–507, 2020.

8. T.E. Malliavin, A. Mucherino, C. Lavor, L. Liberti, *Systematic Exploration of Protein Conformational Space using a Distance Geometry Approach*, Journal of Chemical Information and Modeling **59**(10), 4486–4503, 2019.

9. S.J.L. Billinge, Ph.M. Duxbury, D.S. Gonçalves, C. Lavor, A. Mucherino, *Recent Results on Assigned and Unassigned Distance Geometry with Applications to Protein Molecules and Nanostructures*, Annals of Operations Research **271**(1), 161–203, 2018.

10. F. Fidalgo, D.S. Gonçalves, C. Lavor, L. Liberti, A. Mucherino, *A Symmetry-based Splitting Strategy for Discretizable Distance Geometry Problems*, Journal of Global Optimization **71**(4), 717–733, 2018.

11. D.S. Gonçalves, A. Mucherino, C. Lavor, L. Liberti, *Recent Advances on the Interval Distance Geometry Problem*, Journal of Global Optimization **69**(3), 525–545, 2017.

12. S.J.L. Billinge, Ph.M. Duxbury, D.S. Gonçalves, C. Lavor, A. Mucherino, *Assigned and Unassigned Distance Geometry: Applications to Biological Molecules and Nanostructures*, Quarterly Journal of Operations Research **14**(4), 337–376, 2016.

13. D.S. Gonçalves, A. Mucherino, *Optimal Partial Discretization Orders for Discretizable Distance Geometry*, International Transactions in Operational Research **23**(5), 947–967, 2016.

14. A. Cassioli, B. Bardiaux, G. Bouvier, A. Mucherino, R. Alves, L. Liberti, M. Nilges, C. Lavor, T.E. Malliavin, *An Algorithm to Enumerate all Possible Protein Conformations verifying a Set of Distance Restraints*, BMC Bioinformatics **16**:23, 15 pages, 2015.

15. D.S. Gonçalves, A. Mucherino, *Discretization Orders and Efficient Computation of Cartesian Coordinates for Distance Geometry*, Optimization Letters **8**(7), 2111–2125, 2014.

16. V. Costa, A. Mucherino, C. Lavor, A. Cassioli, L.M. Carvalho, N. Maculan, *Discretization Orders for Protein Side Chains*, Journal of Global Optimization **60**(2), 333–349, 2014.

17. L. Liberti, C. Lavor, N. Maculan, A. Mucherino, *Euclidean Distance Geometry and Applications*, SIAM Review **56**(1), 3–69, 2014.
Awarded **Best of Computing** by ACM Computing Reviews in 2014.

18. L. Liberti, B. Masson, J. Lee, C. Lavor, A. Mucherino, *On the Number of Realizations of Certain Henneberg Graphs arising in Protein Conformation*, Discrete Applied Mathematics **165**, 213–232, 2014.

19. C. Lavor, L. Liberti, A. Mucherino, *The interval Branch-and-Prune Algorithm for the Discretizable Molecular Distance Geometry Problem with Inexact Distances*, Journal of Global Optimization **56**(3), 855–871, 2013.

20. A. Mucherino, C. Lavor, L. Liberti, *The Discretizable Distance Geometry Problem*, Optimization Letters **6**(8), 1671–1686, 2012.

21. A. Mucherino, C. Lavor, L. Liberti, *Exploiting Symmetry Properties of the Discretizable Molecular Distance Geometry Problem*, Journal of Bioinformatics and Computational Biology **10**(3), 1242009(1–15), 2012.

22. C. Lavor, L. Liberti, N. Maculan, A. Mucherino, *The Discretizable Molecular Distance Geometry Problem*, Computational Optimization and Applications **52**, 115–146, 2012.

23. C. Lavor, J. Lee, A. Lee-St. John, L. Liberti, A. Mucherino, M. Sviridenko, *Discretization Orders for Distance Geometry Problems*, Optimization Letters **6**(4), 783–796, 2012.

24. C. Lavor, L. Liberti, N. Maculan, A. Mucherino, *Recent Advances on the Discretizable Molecular Distance Geometry Problem*, European Journal of Operational Research **219**, 698–706, 2012.

25. C. Lavor, A. Mucherino, L. Liberti, N. Maculan, *On the Computation of Protein Backbones by using Artificial Backbones of Hydrogens*, Journal of Global Optimization **50**(2), 329–344, 2011.

26. L. Liberti, C. Lavor, A. Mucherino, N. Maculan, *Molecular Distance Geometry Methods: from Continuous to Discrete*, International Transactions in Operational Research **18**(1), 33–51, 2011.
Awarded **ITOR Top Article** in 2013.

27. C. Lavor, A. Mucherino, L. Liberti, N. Maculan, *Discrete Approaches for Solving Molecular Distance Geometry Problems using NMR Data*, International Journal of Computational Biosciences **1**(1), 88–94, 2010.

28. A. Mucherino, A. Masello, *Statistical Analysis on the Globular Shape of Protein Conformations*, JP Journal of Biostatistics **4**(1), 1–12, 2010.

29. A. Mucherino, P.J. Papajorgji, P.M. Pardalos, *A Survey of Data Mining Techniques Applied to Agriculture*, Operational Research: An International Journal **9**(2), 121–140, 2009.

30. A. Mucherino, S. Costantini, D. di Serafino, M. D'Apuzzo, A. Facchiano, G. Colonna, *Towards a Computational Description of the Structure of all-alpha Proteins as Emergent Behaviour of a Complex System*, Computational Biology and Chemistry **32**(4), 233–239, 2008.

31. S. Cafieri, M. D'Apuzzo, M. Marino, A. Mucherino, G. Toraldo, *Interior Point Solver for Large-Scale Quadratic Programming Problems with Bound Constraints*, Journal of Optimization Theory and Applications **129**(1), 55–75, 2006.

National journals

32. A. Mucherino, *Introducing the Interaction Distance in the context of Distance Geometry for Human Motions*, Chebyshevskii sbornik **20**(2), 263–273, 2019.

33. A. Mucherino, C. Lavor, L. Liberti, N. Maculan, *On the Definition of Artificial Backbones for the Discretizable Molecular Distance Geometry Problem*, Mathematica Balkanica **23**(3-4), 289–302, 2009.

Authored books

34. A. Mucherino, P.J. Papajorgji, P.M. Pardalos, *Data Mining in Agriculture*, 274 pages, Springer, 2009.

Edited books

35. A. Mucherino, C. Lavor, L. Liberti, N. Maculan (Eds.), *Distance Geometry: Theory, Methods and Applications*, 410 pages, Springer, 2013.

Journal special issues

36. A. Mucherino, A. Nixon, M. Sitharam, H. Wolkowicz, *Open Problems and Solutions: Rigidity and Distance Geometry*, special issue of Discrete Applied Mathematics, "virtual special issue" 0166-218X, Elsevier, 2023.

37. A.D. Báez-Sánchez, C. Lavor, A. Mucherino, *Optimization in Distance Geometry*, special issue of Journal of Global Optimization **83**(1), Springer, 1–185, 2022.

38. A. Mucherino, C. Lavor, *Distances in Optimization and Graphs dedicated to the Memory of Michel Deza*, special issue of Optimization Letters **14**(2), Springer, 269–507, 2020.

39. A. Mucherino, R. de Freitas, C. Lavor, *Distance Geometry and Applications*, special issue of Discrete Applied Mathematics **197**, Elsevier, 1–144, 2015.

Books of conference proceedings

40. A. Andrioni, R. de Freitas, C. Lavor, L. Liberti, N. Maculan, A. Mucherino (Eds.), *Proceedings of Distance Geometry and Applications* (DGA13), Manaus, Amazonas, Brazil, 2013.

41. S. Cafieri, A. Mucherino, G. Nannicini, F. Tarissan, L. Liberti (Eds.), *Proceedings of the* 8th *Cologne-Twente Workshop on Graphs and Combinatorial Optimization* (CTW09), Paris, France, 2009.

Conference papers (refereed)

42. A. Mucherino, J-H. Lin, *The Coherent Multi-Representation Problem for Protein Structure Determination*, Lectures Notes in Computer Science **14321**, H. Moosaei et al. (Eds.), Proceedings of the 6th International Conference on Dynamics of Information Systems (DIS23), Prague, Czech Republic, 194–202, 2023.

43. S.B. Hengeveld, A. Mucherino, *Variable Neighborhood Search in Hamming Space*, to appear in Lecture Notes in Computer Science, Proceedings of the 14th International Conference on Large-Scale Scientific Computations (LSSC23), Sozopol, Bulgaria, June 2023.

44. S.B. Hengeveld, F. Plastria, A. Mucherino, D.A. Pelta, *A Linear Program for Points of Interest Relocation in Adaptive Maps*, Lecture Notes in Computer Science **14072** (part 2), F. Nielsen, F. Barbaresco (Eds.), Proceedings of Geometric Science of Information (GSI23), Saint Malo, France, 551–559, 2023.

45. A. Mucherino, *The Coherent Multi-Representation Problem with Applications in Structural Biology*, Lecture Notes in Computer Science **13919**, Lecture Notes in Bioinformatics series, Proceedings of the 10th International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO23), Gran Canaria, Spain, 338–346, 2023.

46. S.B. Hengeveld, A. Mucherino, *On the Feasible Regions Delimiting Natural Human Postures in a Novel Skeletal Representation*, IEEE Conference Proceedings, Federated Conference on Computer Science and Information Systems (FedCSIS22), 4th International Workshop on Artificial Intelligence in Machine Vision and Graphics (AIMaViG22), Sofia, Bulgaria, 175–179, 2022.

47. D.S. Gonçalves, A. Mucherino, *A Distance Geometry Procedure using the Levenberg-Marquardt Algorithm and with Applications in Biology but not only*, Lecture Notes in Computer Science **13347**, Lecture Notes in Bioinformatics series, Proceedings of the 9th International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO22), Gran Canaria, Spain, 142–152, 2022.

48. A. Mucherino, BINMETA*: a New Java Package for Meta-Heuristic Searches*, Lecture Notes in Computer Science **13127**, Proceedings of the 13th International Conference on Large-Scale Scientific Computations (LSSC21), Sozopol, Bulgaria, 242–249, 2022.

49. S.B. Hengeveld, T. Malliavin, J.H. Lin, L. Liberti, A. Mucherino, *A Study on the Impact of the Distance Types Involved in Protein Structure Determination by NMR*, IEEE Conference Proceedings, International Conference on Bioinformatics & Biomedicine (BIBM21), Computational Structural Bioinformatics Workshop (CSBW21), online event, 9 pages, 2021.

50. S.B. Hengeveld, A. Mucherino, *On the Representation of Human Motions and Distance-based Retargeting*, IEEE Conference Proceedings, Federated Conference on Computer Science and Information Systems (FedCSIS21), Workshop on Computational Optimization (WCO21), online event, 181–189, 2021.

51. A. Mucherino, D.S. Gonçalves, L. Liberti, J-H. Lin, C. Lavor, N. Maculan, `MD-jeep`*: a New Release for Discretizable Distance Geometry Problems with Interval Data*, IEEE Conference Proceedings, Federated Conference on Computer Science and Information Systems (FedCSIS20), Workshop on Computational Optimization (WCO20), online event, 289–294, 2020.

52. S. Hu, H.P.H. Shum, A. Mucherino, *DSPP: Deep Shape and Pose Priors of Humans*, ACM Conference Proceedings, Motion, Interaction and Games 2019 (MIG19), Newcastle, UK, 6 pages, 2019.

53. A. Mucherino, J-H. Lin, *An Efficient Exhaustive Search for the Discretizable Distance Geometry Problem with Interval Data*, IEEE Conference Proceedings, Federated Conference on Computer Science and Information Systems (FedCSIS19), Workshop on Computational Optimization (WCO19), Leipzig, Germany, 135–141, 2019.

54. A. Mucherino, J-H. Lin, D.S. Gonçalves, *A Coarse-Grained Representation for Discretizable Distance Geometry with Interval Data*, Lecture Notes in Computer Science **11465**, Lecture Notes in Bioinformatics series, I. Rojas et al (Eds.), Proceedings of the 7th International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO19), Part I, Granada, Spain, 3–13, 2019.

55. Z. Liu, A. Mucherino, L. Hoyet, F. Multon, *Surface based Motion Retargeting by Preserving Spatial Relationship*, ACM Conference Proceedings, Motion, Interaction and Games 2018 (MIG18), Limassol, Cyprus, Greece, 12 pages, 2018.

56. A. Bernardin, L. Hoyet, A. Mucherino, D.S. Gonçalves, F. Multon, *Normalized Euclidean Distance Matrices for Human Motion Retargeting*, ACM Conference Proceedings, Motion in Games 2017 (MIG17), Barcelona, Spain, 6 pages, 2017.

57. A. Mucherino, D.S. Gonçalves, *An Approach to dynamical Distance Geometry*, Lecture Notes in Computer Science **10589**, F. Nielsen, F. Barbaresco (Eds.), Proceedings of Geometric Science of Information (GSI17), Paris, France, 821–829, 2017.

58. W. Gramacho, A. Mucherino, J-H. Lin, C. Lavor, *A New Approach to the Discretization of Multidimensional Scaling*, IEEE Conference Proceedings, Federated Conference on Computer Science and Information Systems (FedCSIS16), Workshop on Computational Optimization (WCO16), Gdansk, Poland, 601–609, 2016.

59. S. Fidanova, O. Roeva, A. Mucherino, K. Kapanova, *InterCriteria Analysis of Ant Algorithm with Environment Change for GPS Surveying Problem*, Lecture Notes in Artificial Intelligence **9883**, Proceedings of the 17th International Conference on Artificial Intelligence: Methodology, Systems, Applications (AIMSA16), Varna, Bulgaria, 271–278, 2016.

60. A. Mucherino, *Optimal Discretization Orders for Distance Geometry: a Theoretical Standpoint*, Lecture Notes in Computer Science **9374**, Proceedings of the 10th International Conference on Large-Scale Scientific Computations (LSSC15), Sozopol, Bulgaria, 234–242, 2015.

61. A. Mucherino, S. Fidanova, M. Ganzha, *Ant Colony Optimization with Environment Changes: an Application to GPS Surveying*, IEEE Conference Proceedings, Federated Conference on Computer Science and Information Systems (FedCSIS15), Workshop on Computational Optimization (WCO15), Lodz, Poland, 495–500, 2015.

62. A. Mucherino, *A Pseudo de Bruijn Graph Representation for Discretization Orders for Distance Geometry*, Lecture Notes in Computer Science **9043**, Lecture Notes in Bioinformatics series, F. Ortuño, I. Rojas (Eds.), Proceedings of the 3rd International Work-Conference on Bioinformatics and Biomedical Engineering (IWBBIO15), Part I, Granada, Spain, 514–523, 2015.

63. D.S. Gonçalves, A. Mucherino, C. Lavor, *An Adaptive Branching Scheme for the Branch & Prune Algorithm applied to Distance Geometry*, IEEE Conference Proceedings, Federated Conference on Computer Science and Information Systems (FedCSIS14), Workshop on Computational Optimization (WCO14), Warsaw, Poland, 463–469, 2014.

64. D.S. Gonçalves, A. Mucherino, C. Lavor, *Energy-based Pruning Devices for the BP Algorithm for Distance Geometry*, IEEE Conference Proceedings, Federated Conference on Computer Science and Information Systems (FedCSIS13), Workshop on Computational Optimization (WCO13), Krakov, Poland, 335–340, 2013.

65. A. Mucherino, *On the Identification of Discretization Orders for Distance Geometry with Intervals*, Lecture Notes in Computer Science **8085**, F. Nielsen and F. Barbaresco (Eds.), Proceedings of Geometric Science of Information (GSI13), Paris, France, 231–238, 2013.

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69. A. Mucherino, M. Fuchs, X. Vasseur, S. Gratton, *Variable Neighborhood Search for Robust Optimization and Applications to Aerodynamics*, Lecture Notes in Computer Science **7116**, I. Lirkov, S. Margenov, J. Wanśiewski (Eds.), Proceedings of the 8th International Conference on Large-Scale Scientific Computations (LSSC11), Sozopol, Bulgaria, 230–237, 2012.

70. A. Mucherino, C. Lavor, L. Liberti, *A Symmetry-Driven BP Algorithm for the Discretizable Molecular Distance Geometry Problem*, IEEE Conference Proceedings, Computational Structural Bioinformatics Workshop (CSBW11), International Conference on Bioinformatics & Biomedicine (BIBM11), Atlanta, GA, USA, 390–395, 2011.

71. A. Mucherino, *Extending the Definition of β-Consistent Biclustering for Feature Selection*, IEEE Conference Proceedings, Federated Conference on Computer Science and Information Systems (FedCSIS11), Workshop on Computational Optimization (WCO11), Szczecin, Poland, 269–274, 2011.

72. A. Mucherino, A. Urtubia, *Feature Selection for Datasets of Wine Fermentations*, Proceedings of the 10th International Conference on Modeling and Applied Simulation (MAS11), Rome, Italy, 309–313, 2011.

73. A. Mucherino, G. Ruß, *Recent Developments in Data Mining and Agriculture*, IbaI Conference Proceedings, Proceedings of the Industrial Conference on Data Mining (ICDM11), Workshop on Data Mining in Agriculture (DMA11), New York City, USA, 90–98, 2011.

74. L. Liberti, B. Masson, J. Lee, C. Lavor, A. Mucherino, *On the Number of Solutions of the Discretizable Molecular Distance Geometry Problem*, Lecture Notes in Computer Science **6831**, W. Wang, X. Zhu, D-Z. Du (Eds.), Proceedings of the 5th Annual International Conference on Combinatorial Optimization and Applications (COCOA11), Zhangjiajie, China, 322–342, 2011.

75. A. Mucherino, C. Lavor, T. Malliavin, L. Liberti, M. Nilges, N. Maculan, *Influence of Pruning Devices on the Solution of Molecular Distance Geometry Problems*, Lecture Notes in Computer Science **6630**, P.M. Pardalos, S. Rebennack (Eds.), Proceedings of the 10th International Symposium on Experimental Algorithms (SEA11), Crete, Greece, 206–217, 2011.

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78. A. Mucherino, A. Urtubia, *Consistent Biclustering and Applications to Agriculture*, IbaI Conference Proceedings, Proceedings of the Industrial Conference on Data Mining (ICDM10), Workshop on Data Mining in Agriculture (DMA10), Berlin, Germany, 105–113, 2010.

79. A. Mucherino, C. Lavor, L. Liberti, E-G. Talbi, *A Parallel Version of the Branch & Prune Algorithm for the Molecular Distance Geometry Problem*, IEEE Conference Proceedings, ACS/IEEE International Conference on Computer Systems and Applications (AICCSA10), Hammamet, Tunisia, 1–6, 2010.

80. C. Lavor, A. Mucherino, L. Liberti, N. Maculan, *An Artificial Backbone of Hydrogens for Finding the Conformation of Protein Molecules*, IEEE Conference Proceedings, Computational Structural Bioinformatics Workshop (CSBW09), International Conference on Bioinformatics & Biomedicine (BIBM09), Washington D.C., USA, 152–155, 2009.

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Book chapters (refereed)

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88. A. Mucherino, *On the Exact Solution of the Distance Geometry with Interval Distances in Dimension 1*. In: "Recent Advances in Computational Optimization", S. Fidanova (Ed.), Studies in Computational Intelligence **717**, 123–134, 2018.

89. A. Mucherino, S. Fidanova, M. Ganzha, *Introducing the Environment in Ant Colony Optimization*. In: "Recent Advances in Computational Optimization", S. Fidanova (Ed.), Studies in Computational Intelligence **655**, 147–158, 2016.

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