

# Publications and communications of Raymond Joseph BISDORFF

## Thesis and dissertations

### Doctoral thesis

BISDORFF, R. (2002). *Design and Implementation of Decision Making Checkers for Industrial Production Scheduling, Control, and Maintenance* [Doctoral thesis, ULiège - Université de Liège]. ORBilu-University of Luxembourg. <https://orbilu.uni.lu/handle/10993/23927>  
<https://hdl.handle.net/10993/23927>

BISDORFF, R. (1981). *Evaluations distributionnelles sur une échelle de préférence qualitative* [Doctoral thesis, Université Paris Dauphine]. ORBilu-University of Luxembourg. <https://orbilu.uni.lu/handle/10993/45343>  
<https://hdl.handle.net/10993/45343>

## Scientific outputs

### Articles in scientific journals with peer reviewing verified by ORBi or included in HEC journal guide

BISDORFF, R., Meyer, P., & Veneziano, T. (2014). Elicitation of criteria weights maximising the stability of pairwise outranking statements. *Journal of Multi-Criteria Decision Analysis*, 21 (1-2), 113-124.  
doi:10.1002/mcda.1496  
<https://hdl.handle.net/10993/23701>

BISDORFF, R. (2013). On polarizing outranking relations with large performance differences. *Journal of Multi-Criteria Decision Analysis*, 20, 3-12. doi:10.1002/mcda.1472  
<https://hdl.handle.net/10993/245>

Olteanu, A.-L., Meyer, P., & BISDORFF, R. (2013). Descriptive profiles for sets of alternatives in multiple criteria decision aid. *Lecture Notes in Computer Science, 8176 LNAI*, 285-296. doi:10.1007/978-3-642-41575-3\_22  
<https://hdl.handle.net/10993/23715>

BISDORFF, R. (2008). On Clustering the Criteria in an Outranking Based Decision Aid Approach. *Communications in Computer and Information Science*, 14, 409-418. doi:10.1007/978-3-540-87477-5\_44  
<https://hdl.handle.net/10993/23718>

BISDORFF, R., & MARICHAL, J.-L. (2008). Counting non-isomorphic maximal independent sets of the n-cycle graph. *Journal of Integer Sequences*, 11 (5), 1-16.  
<https://hdl.handle.net/10993/387>

BISDORFF, R., Meyer, P., & Roubens, M. (2008). R UBIS: A bipolar-valued outranking method for the choice problem. *4OR: A Quarterly Journal of Operations Research*, 6 (2), 143-165. doi:10.1007/s10288-007-0045-5  
<https://hdl.handle.net/10993/23716>

BISDORFF, R., Meyer, P., & Siskos, Y. (2008). OR and the management of electronic services - EURO'2004. *European Journal of Operational Research*, 187 (3), 1293-1295. doi:10.1016/j.ejor.2006.09.013  
<https://hdl.handle.net/10993/23717>

BISDORFF, R., & Lundberg, G. (2007). Human centered processes: Toward a naturalistic decision making paradigm. *European Journal of Operational Research*, 177 (3), 1313-1316. doi:10.1016/j.ejor.2005.04.004  
<https://hdl.handle.net/10993/23719>

BISDORFF, R. (October 2006). On enumerating the kernels in a bipolar-valued digraph. *Annales du LAMSADE*, 6, 38.  
<https://hdl.handle.net/10993/38741>

BISDORFF, R., Pirlot, M., & Roubens, M. (2006). Choices and kernels in bipolar valued digraphs. *European Journal of Operational Research*, 175 (1), 155-170. doi:10.1016/j.ejor.2005.05.004  
<https://hdl.handle.net/10993/23720>

BISDORFF, R. (October 2004). Preference aggregation with multiple criteria of ordinal significance. *Annales du LAMSADE*, 3, 25-44.  
<https://hdl.handle.net/10993/42420>

BISDORFF, R. (2004). Concordant outranking with multiple criteria of ordinal significance: A contribution to robust multicriteria aid for decision. *4OR: A Quarterly Journal of Operations Research*, 2 (4), 293-308.  
doi:10.1007/s10288-004-0053-7  
<https://hdl.handle.net/10993/23721>

BISDORFF, R., & Roubens, M. (2004). Choice procedures in pairwise comparison multiple-attribute decision making methods. *Lecture Notes in Computer Science*, 3051, 1-7. doi:10.1007/978-3-540-24771-5\_1  
<https://hdl.handle.net/10993/23722>

Barthélemy, J. P., BISDORFF, R., & Coppin, G. (2002). Human centered processes and decision support systems. *European Journal of Operational Research*, 136 (2), 233-252. doi:10.1016/S0377-2217(01)00112-6  
<https://hdl.handle.net/10993/23725>

BISDORFF, R. (2002). Electre-like clustering from a pairwise fuzzy proximity index. *European Journal of Operational Research*, 138 (2), 320-331. doi:10.1016/S0377-2217(01)00249-1  
<https://hdl.handle.net/10993/23723>

BISDORFF, R. (2000). Logical foundation of fuzzy preferential systems with application to the electre decision aid methods. *Computers and Operations Research*, 27 (7-8), 673-687. doi:10.1016/S0305-0548(99)00112-4  
<https://hdl.handle.net/10993/23724>

BISDORFF, R. (1999). Bipolar ranking from pairwise fuzzy outrankings. *Belgian Journal of Operations Research, Statistics and Computer Science*, 37 (4), 379-387.  
<https://hdl.handle.net/10993/38738>

BISDORFF, R. (1999). Cognitive support methods for multi-criteria expert decision making. *European Journal of Operational Research*, 119 (2), 379-387. doi:10.1016/S0377-2217(99)00140-X  
<https://hdl.handle.net/10993/23726>

BISDORFF, R., & Laurent, S. (1995). Industrial linear optimization problems solved by constraint logic programming. *European Journal of Operational Research*, 84 (1), 82-95. doi:10.1016/0377-2217(94)00319-8  
<https://hdl.handle.net/10993/23727>

## Books

### Written alone

BISDORFF, R. (2022). *Algorithmic Decision Making with Python Resources: From multicriteria performance records to decision algorithms via bipolar-valued outranking digraphs*. (1). Heidelberg, Germany: Springer.  
doi:10.1007/978-3-030-90928-4  
<https://hdl.handle.net/10993/48296>

### Written in collaboration

BISDORFF, R., Dias, L. C., Meyer, P., Mousseau, V., & Pirlot, M. (2015). *Evaluation and decision models with multiple criteria: Case studies*. Springer. doi:10.1007/978-3-662-46816-6  
<https://hdl.handle.net/10993/23698>

BISDORFF, R., Dias, L. C., Meyer, P., Mousseau, V., & Pirlot, M. (2015). *Introduction*. Springer. doi:10.1007/978-3-662-46816-6\_1  
<https://hdl.handle.net/10993/23702>

## Direction and/or edition of collective works

BISDORFF, R., MARICHAL, J.-L., & Meyer, P. (Eds.). (2005). *Proc. of the 61st Meeting of the Eur. Working Group "Multiple Criteria Decision Aiding" (Luxembourg, March 10-12, 2005) - Theme: Preference Modelling*. Luxembourg, Luxembourg: SMA - University of Luxembourg.  
<https://hdl.handle.net/10993/7263>

## Chapters in collective works

BISDORFF, R. (2015). The EURO 2004 best poster award: Choosing the best poster in a scientific conference. In R. BISDORFF, L. C. Dias, P. Meyer, V. Mousseau, ... M. Pirlot, *Evaluation and Decision Models with Multiple Criteria : Case Studies* (pp. 117-165). Heidelberg, Germany: Springer. doi:10.1007/978-3-662-46816-6\_5  
<https://hdl.handle.net/10993/23714>

BISDORFF, R., Meyer, P., & VENEZIANO, T. (2009). Inverse analysis from a Condorcet robustness denotation of valued outranking relations. In F. Rossi & A. Tsoukiás (Eds.), *Algorithmic Decision Theory* (pp. 180-191). Berlin - Heidelberg, Unknown/unspecified: Springer.  
<https://hdl.handle.net/10993/23454>

BISDORFF, R. (2002). Logical foundation of multi-criteria decision-aiding. In P. Perny, R. Slowinski, D. VanderPooten, P. Vincke, D. Bouyssou (Ed.), ... E. Jacquet-Lagrèze (Ed.), *Aiding decisions with multiple criteria: Essays in Honor of Bernard Roy* (pp. 379-403). Dordrecht, Netherlands: Kluwer Academic Publishers.  
<https://hdl.handle.net/10993/45313>

BISDORFF, R. (2000). Professional Careers of Retired Working Persons. In E. Diday & H.-H. Bock (Ed.), *Analysis of Symbolic Data: Exploratory methods for extracting statistical information from complex data* (pp. 356-374). Springer.  
<https://hdl.handle.net/10993/47406>

## Proceedings published in a book or a journal

WAGLE, S. S., GUZEK, M., BOUVRY, P., & BISDORFF, R. (2016). Comparisons of Heat Map and IFL Technique to Evaluate the Performance of Commercially Available Cloud Providers. In *IEEE, 2016 IEEE 9th International Conference on Cloud Computing* (pp. 529-536). United States: IEEE.  
<https://hdl.handle.net/10993/29528>

WAGLE, S. S., GUZEK, M., BOUVRY, P., & BISDORFF, R. (2015). An Evaluation Model for Selecting Cloud Services from Commercially Available Cloud Providers. In *2015 IEEE 7th International Conference on Cloud Computing Technology and Science (CloudCom)* (pp. 1-8). doi:10.1109/CloudCom.2015.94  
<https://hdl.handle.net/10993/24793>

BISDORFF, R., Meyer, P., & OLTEANU, A. (2011). A Clustering Approach using Weighted Similarity Majority Margins. In *Advanced Data Mining and Applications ADMA, Beijing spring 2013* (pp. 15-28). Springer-Verlag. doi:10.1007/978-3-642-25853-4\_2  
<https://hdl.handle.net/10993/285>

Meyer, P., MARICHAL, J.-L., & BISDORFF, R. (2008). Disaggregation of bipolar-valued outranking relations. In H. A. Le Thi, P. Bouvry, ... T. Pham Dinh (Eds.), *Modelling, Computation and Optimization in Information Systems and Management Sciences* (pp. 204-213). Berlin, Germany: Springer. doi:10.1007/978-3-540-87477-5\_23  
<https://hdl.handle.net/10993/14485>

BISDORFF, R., & Roubens, M. (2004). On clear choices with ordinal valued binary relations. In C. Henggeler Antunes, J. Figueira, ... J. Clímaco (Eds.), *Multiple Criteria Decision Aiding* (pp. 43-66). Coimbra, Portugal: Faculdade de Económica da Universidade de Coimbra.  
<https://hdl.handle.net/10993/52477>

BISDORFF, R. (2004). On a natural fuzzification of Boolean logic. In P. E. Klement, Erich Peter, *Proceedings of the 25th Linz Seminar on Fuzzy Set Theory, Mathematics of Fuzzy Systems* (pp. 6). Linz, Austria: Bildungszentrum St. Magdalena.  
<https://hdl.handle.net/10993/38740>

## Eprint/Working paper

BISDORFF, R. (2010). *On detecting and enumerating chordless circuits in a digraph*. ORBilu-University of Luxembourg. <https://orbilu.uni.lu/handle/10993/23920>.  
<https://hdl.handle.net/10993/23920>

BISDORFF, R. (2007). *On maximal independent sets in circulant digraphs*. (Final version). ORBilu-University of Luxembourg. <https://orbilu.uni.lu/handle/10993/35522>.  
<https://hdl.handle.net/10993/35522>

BISDORFF, R. (1995). *Quel est l'intérêt d'une approche multi-dimensionnelle du jugement de préférence ?* (08.02.1995). ORBilu-University of Luxembourg. <https://orbilu.uni.lu/handle/10993/45300>.  
<https://hdl.handle.net/10993/45300>

BISDORFF, R. (n.d.). *On linear decompositions of L-valued simple graphs*. ORBilu-University of Luxembourg. <https://orbilu.uni.lu/handle/10993/38736>.  
<https://hdl.handle.net/10993/38736>

## Reports

### Expert reports

BISDORFF, R. (2011). *Modern MCDA software: requirements and opportunities*. EURO working group on Multiple Criteria Decision Aid. <https://orbilu.uni.lu/handle/10993/256>  
<https://hdl.handle.net/10993/256>

BISDORFF, R. (2009). *The Decision Deck Project*. Geiger, Martin Josef (editor).  
<https://orbilu.uni.lu/handle/10993/22786>  
<https://hdl.handle.net/10993/22786>

## Computer developments

### Softwares

BISDORFF, R. (2025). *Digraph3 Python Software Collection*.  
<https://hdl.handle.net/10993/43505>

BISDORFF, R. (2014). *Documentation of the Digraph3 Python software resources*.  
<https://hdl.handle.net/10993/23919>

## Unpublished scientific communications

### Scientific congresses, symposiums and conference with international audience

### On request

BISDORFF, R. (December 2012). *Algorithmic Decision Theory* [Paper presentation]. ICOCBA2012 International Conference on "Optimization, Computing and Business Analytics", Kolkata, India.  
<https://hdl.handle.net/10993/23916>

BISDORFF, R. (21 June 2011). *Aide à la Décision Concentrée sur l'Expertise Humaine* [Paper presentation]. Journée en hommage à Jean-Pierre Barthélémy, Paris, France.  
<https://hdl.handle.net/10993/23923>

## On personal proposal

BISDORFF, R. (November 2016). *Computing linear rankings from trillions of pairwise outranking situations* [Paper presentation]. DA2PL'2016 From Multiple Criteria Decision Aid to Preference Learning, Paderborn, Germany.  
<https://hdl.handle.net/10993/28613>

BISDORFF, R. (January 2016). *Ranking big performance tableaux with multiple incommensurable criteria and missing data* [Paper presentation]. ORBEL 30 30th Belgian Conference on Operations Research, Louvain-la-Neuve, Belgium.  
<https://hdl.handle.net/10993/23921>

BISDORFF, R. (06 February 2015). *On boosting Kohler's ranking-by-choosing rule with a quantiles preorderning* [Paper presentation]. ORBEL 29 29th Belgian Conference on Operations Research, Antwerp, Belgium.  
<https://hdl.handle.net/10993/23911>

BISDORFF, R. (11 November 2014). *On confident outrankings with multiple criteria of uncertain significance* [Paper presentation]. DA2PL'2014 From Multiple Criteria Decision Aid to Preference Learning, Paris, France.  
<https://hdl.handle.net/10993/23910>

BISDORFF, R. (27 October 2014). *On ranking-by-choosing with bipolar outranking digraphs of large orders* [Paper presentation]. Conference Graphs & Decisions, Luxembourg, Luxembourg.  
<https://hdl.handle.net/10993/23912>

BISDORFF, R. (31 January 2014). *On weakly ordering by choosing from valued pairwise outranking situations* [Paper presentation]. ORBEL 28 28th Belgian Conference on Operations Research, Mons, Belgium.  
<https://hdl.handle.net/10993/23913>

BISDORFF, R. (15 November 2012). *On measuring and testing the ordinal correlation between bipolar outranking relations* [Paper presentation]. DA2PL'2012 From Multiple Criteria Decision Aid to Preference Learning, Mons, Belgium.  
<https://hdl.handle.net/10993/23909>

BISDORFF, R. (February 2012). *On polarizing outranking relations with large performance differences* [Paper presentation]. ORBEL 26 26th Belgian Conference on Operations Research, Brussels, Belgium.  
<https://hdl.handle.net/10993/23918>

BISDORFF, R. (10 February 2011). *K-Sorting with multiple ordinal criteria* [Paper presentation]. ORBEL 25 25th Belgian Conference on Operations Research, Ghent, Belgium.  
<https://hdl.handle.net/10993/23924>

BISDORFF, R. (14 April 2010). *On a bipolar foundation of the outranking concept* [Paper presentation]. URPDM-2010, 25th Mini EURO Conference Uncertainty and Robustness in Planning and Decision Making, Coimbra, Portugal.  
<https://hdl.handle.net/10993/23925>

BISDORFF, R. (28 January 2010). *Enumerating chordless circuits in directed graphs* [Paper presentation]. ORBEL 24 24th Belgian Conference on Operations Research, Liège, Belgium.  
<https://hdl.handle.net/10993/23926>

Meyer, P., BISDORFF, R., & MARICHAL, J.-L. (January 2008). *Disaggregation of bipolar-valued outranking relations and application to the inference of model parameters* [Paper presentation]. 19th Int. Conf. on Multiple Criteria Decision Making (MCDM 2008), Auckland, New Zealand.  
<https://hdl.handle.net/10993/10989>

Meyer, P., MARICHAL, J.-L., & BISDORFF, R. (September 2007). *Disaggregation of bipolar-valued outranking relations and application to the inference of model parameters* [Paper presentation]. 38th Meeting of the Eur. Mathematical Psychology Group (EMPG 38), Decision Science Symposium, Luxembourg, Luxembourg, Sep. 13, 2007, Luxembourg, Luxembourg.  
<https://hdl.handle.net/10993/10993>

MEYER, P., & BISDORFF, R. (February 2007). *Exploitation of a bipolar-valued outranking relation for the choice of k best alternatives* [Paper presentation]. FRANCORO V / ROADEF 2007, Grenoble, France.  
<https://hdl.handle.net/10993/45336>

BISDORFF, R., & MARICHAL, J.-L. (January 2007). *Counting non-isomorphic maximal independent sets of the n-cycle graph* [Paper presentation]. 21st Annual Conf. of the Belgian Operational Research Society (ORBEL 21), Luxembourg, Jan. 18-19, 2007, Luxembourg, Luxembourg.  
<https://hdl.handle.net/10993/10987>

## Scientific presentations in universities or research centers

BISDORFF, R. (13 June 2018). *UL HPC users'session: Mastering big data* [Paper presentation]. UL HPC School 2018, Belval, Luxembourg.  
<https://hdl.handle.net/10993/36270>

BISDORFF, R. (03 May 2017). *Algorithmic Decision Theory for solving complex decision problems* [Paper presentation]. Distinguished ILIAS Lecture IV.  
<https://hdl.handle.net/10993/31196>

BISDORFF, R. (August 2013). *The Electre like outranking approach to MCDA* [Paper presentation]. 11th MCDA|M Summer School, Hamburg, Germany.  
<https://hdl.handle.net/10993/23915>

BISDORFF, R. (11 October 2005). *Exploitation en théorie de la décision pour résoudre des problèmes complexes* [Paper presentation]. Séminaire du LAMSADE, Université Paris-Dauphine, France.  
<https://hdl.handle.net/10993/47659>

## Scientific congresses and symposiums with national audience

BISDORFF, R. (28 January 2020). *Etudes universitaires sur le Luxembourg: Mots d'accueil* [Paper presentation]. Conférence interdisciplinaire d'Etudes sur le Luxembourg, Chambre des députés, Luxembourg.  
<https://hdl.handle.net/10993/43782>

BISDORFF, R. (05 July 2016). *A sparse outranking digraph model for HPC-ranking of big performance tableaux* [Paper presentation]. 28th European Conference on Operational Research, Poznan, Poland.  
<https://hdl.handle.net/10993/28393>

BISDORFF, R. (20 November 1998). *On Designing an L-valued Prolog Engine* [Paper presentation]. BENELOG'98, the 9th Benelux Workshop on Logic Programming, Amsterdam, Netherlands.  
<https://hdl.handle.net/10993/38737>

BISDORFF, R. (09 September 1996). *On computing kernels on fuzzy simple graphs by combinatorial enumeration using a CPL(FD) system* [Paper presentation]. 8th Benelux Workshop on Logic Programming, Louvain-la-Neuve, Belgium.  
<https://hdl.handle.net/10993/46933>