

# Loris MARCHAL

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Married, 3 children.

## POSITIONS

- **Head of the Inria ROMA team (2021–present)** of the LIP laboratory, co-head of the team during 2018–2020. This is a common CNRS– Inria– ENS-Lyon research team working on Resource Optimization: Models, Algorithms, and scheduling.
- **CNRS senior researcher (oct. 2023–present)** (DR2), at the LIP laboratory of ENS Lyon.
- **CNRS junior researcher (2007–2023)** (CRCN), at the LIP laboratory of ENS Lyon.
- **Visitor Assistant (September 2006 – January 2007)** in the ACIS laboratory of the University of Florida in Gainesville, USA.

## EDUCATION

- **Habilitation thesis** (HDR) from the *École Normale Supérieure de Lyon* defended in March 2018, entitled “Memory and data aware scheduling”. Referees: Ümit V. ÇATALYÜREK, Cynthia A. PHILLIPS and Denis TRYSTRAM.
- **Ph.D.** (Doctorat) from the *École Normale Supérieure de Lyon* defended in October 2006, entitled “Communications collectives et ordonnancement en régime permanent sur plates-formes hétérogènes” (Collective communications and steady-state scheduling on heterogeneous platforms) and prepared under the supervision of Olivier BEAUMONT and Yves ROBERT. Referees: Pierre FRAIGNIAUD and Alix MUNIER-KORDON.
- **Master** (DEA) of computer science from *École Normale Supérieure de Lyon*, June 2003. Research work under the supervision of Yves Robert and entitled “Pipelined collective communications on heterogeneous platforms”.
- Student, *École Normale Supérieure de Lyon*, 2000-2004.

## RECENT FUNDED PROJECTS

**ANR Project Rescue (2010-2014), 4 years.** The main objective of this project is to develop new algorithmic techniques and software tools to solve the *exascale resilience problem*. Solving this problem implies a departure from current approaches, and calls for yet-to-be-discovered algorithms, protocols and software tools. I am a member of this project.

**ANR Project Solhar (2013-2017), 4 years.** This project aims at studying and designing algorithms and parallel programming models for implementing direct methods for the solution of sparse linear systems on emerging computers equipped with accelerators. I am a member of this project and responsible for the “scheduling” workpackage.

**ANR Project Solharis (2019-2023), 4 years.** This project is a follow-up of the previous Solhar project, dedicated more specifically to large-scale and heterogeneous platforms: our objectives is to design algorithms and implementation of direct methods, based on task-based runtimes, that can fully take advantage of distributed memory platforms. Again, I am a member of this project and responsible for the “scheduling” workpackage.

## SCIENTIFIC ANIMATION AND RESEARCH MANAGEMENT

### Major responsibilities

- **Head of the ROMA research team** at the LIP laboratory, starting in January 2021.
- **Co-head of the ROMA research team** at the LIP laboratory, together with Frédéric Vivien (Mar. 2018 – Dec. 2020).
- **Responsible of the competitive selection of ENS Lyon Student for Computer Science (2017–2023).** In charge of coordinating and co-organizing the computer science exams for the selection of the four *Écoles Normales Supérieures* (Lyon, Paris, Paris-Saclay and Rennes).

### Other responsibilities and duties

- **Member of the Scientific Council** of the ENSMM school (École Nationale Supérieure de Mécanique et des Microtechniques, Besançon, France), 2014–2017.
- **Selection committees for assistant professors** (Comités de Sélection de Maîtres de Conférences) at University of Besançon (France) in 2012, at Polytech Tours (France) in 2013, at University of Bordeaux 1 (France) in 2016 and at ENS Rennes (France) in 2021.
- **Member of the scientific council** of the “Complexity and Algorithms” workgroup of the CNRS research group “Informatique Mathématique” (since 03/2018).

### Reviewing and editorial activity

- **Reviewer of the PhD thesis** of Massinissa Ait Aba, defended at Sorbonne University on June 4, 2020.
- **Reviewer of the PhD thesis** of Paweł Żuk defended at Warsaw University on October 16, 2023.
- **Program committee chair** of the HeteroPar 2016 workshop, co-organized with EuroPar 2016 in Grenoble, France
- **Editor** of a special issue of the Parallel Computing journal (Elsevier), following the 2008 “Scheduling for large-scale systems” workshop, with Frédéric Vivien.
- **Editor** of a special issue of the Parallel Computing journal (Elsevier) focused on heterogeneous computing, following both HeteroPar’2016 and HCW 2016, with Erik Saule (HCW’2016 chair) and Oliver Sinnen.
- **Conference program committees:** ICPADS’2009, ISPDC’2009, HeteroPar’2010, ICNC’2010, HCW’2011, ICPP’2011, IPDPS’2011, ICPP’2012, IPDPS’2012, IPDPS’2013, ICPP’2013, IPDPS’2014, IPDPS’2015, IPDPS’2016, IPDPS’2017, SC’2017, IPDPS’2018, ICPP’2019, HiPC’2019, HPCS’2019, ICPP’2020, APDCM’2021, EuroPar’2021, IPDPS’2022, APDCM’2022, ICPP’2022, EuroPar’2023, APDCM’2023, EuroPar’2024.

- **Workshop organization** Organizer of the “Scheduling for large-scale systems” workshop in May 18–21, 2008, in Aussois, France, with 36 invited researchers for <http://graal.ens-lyon.fr/~lmarchal/aussois/>, and in June 7–10, 2008, in Fréjus, France, with 40 invited researchers for <https://scheduling2022.sciencesconf.org/>.
- **Referee** for international journals: Transactions on Computer (IEEE), Transactions on Parallel and Distributed Systems (IEEE), Distributed Computing (Springer), Future Generation of Computer Systems (Elsevier), Parallel Computing (Elsevier), Journal of Parallel and Distributed Computing (Elsevier), International Journal of Foundations of Computer Science (World Scientific) and for many international conferences.

## SUPERVISION

### PhD candidates

- **Mathias Jacquelin (2008–2011)**. Thesis defended in July 2011 on memory-aware algorithms. Co-advised with Yves Robert. Mathias Jacquelin was a research scientist at Lawrence Berkeley National Laboratory (USA) until Nov. 2019 and then moved to work with the Cerebras company (Los Altos, USA).
- **Julien Herrmann (2012–2015)**. Thesis defended in November 2015 on numerical algorithms for very large-scale platforms. Co-advised with Yves Robert. Julien Herrmann is now a postdoctoral fellow at Inria Bordeaux (France).
- **Bertrand Simon (2015–2018)**. Thesis defended in July 2018 on task graph scheduling under limited memory. Co-advised with Frédéric Vivien. Bertrand is now a postdoctoral fellow at the university of Bremen (Germany)
- **Changjiang Gou (2016–2020)**. Thesis on communication- and memory-aware graph scheduling. Co-advised with Anne Benoit. Thesis defended in September 2020. Changjiang is now research engineer at Zhejiang Lab (China).
- **Yishu Du (2019–2022)**. Thesis on resilience for numerical methods. Co-advised with Yves Robert. Thesis defended in December 2022. Yishu will be a postdoctoral fellow at Max Planck Institute in 2023.
- **Maxime Gonthier (2020–2023)**. Thesis on memory-aware scheduling in runtime schedulers. Co-advised with Samuel Thibault (Univ. Bordeaux) and funded by the ANR SOLHARIS project. Thesis defended in September 2023.
- **Anthony Dugois (2020–2023)**. Thesis on scheduling for key-value stores. Co-advised with Louis-Claude Canon (Univ. Besançon). Thesis defended in September 2023.

### Post-doc researchers

- **Adrien RÉMI**: “Sparse factorisation of non-symmetric matrices using elimination trees”, co-advised with Bora Uçar, from in April 2017 to July 2018. Adrien is now assistant professor at Epitech Lyon.

### Master students

- **Veronika REHN** (ENS Lyon, France): “Scheduling and data redistribution strategies on star platforms”, Mar. – Jun. 2006, with Yves Robert and Frédéric Vivien.
- **Javier CELAYA ALASTRUÉ** (University of Zaragoza, Spain): “A Fair Distributed Scheduler for Bag-of-tasks Applications on Desktop Grids”, April – July 2009.

- Thomas LAMBERT (ENS Lyon, France): “Memory allocation for different classes of DAGs” (Feb. – Jun. 2012) and “On Variants of the Hierarchical Bin Packing Problem” (Feb. – Jun. 2013), co-advised with Bora Uçar.
- Bertrand SIMON (ENS Lyon, France): “Scheduling trees of malleable tasks under memory constraints” (Feb. – Jul. 2014), co-advised with Frédéric Vivien.
- Anthony DUGOIS (Univ. Bourgogne France-Comté, France): “Scheduling requests for distributed databases” (May – July 2019, M1 internship, and then Mar–July 2020, M2 internship), co-advised with Louis-Claude Canon.
- Maxime GONTHIER (Univ. Versailles St. Quentin): “Scheduling in StarPU under memory constraint” (Mar–July 2020, M2 internship) co-advised with Samuel Thibault (Univ. Bordeaux).
- Thibault MARETTE (ENS Lyon): “Memory-Aware scheduling for sparse linear solvers with low-rank compression” (Apr–July 2020) co-advised with Grégoire Pichon and Frédéric Vivien.

### Bachelor students

- Gabriel BATHIE (ENS Lyon, France): “Memory-aware scheduling for the StarPU runtime” (June – July 2019), co-advised with Samuel Thibault and Yves Robert.
- Corentin MUNOZ (Univ. Lyon 1, France): “Interactive visualization of DAG schedules” (Apr.–June 2023), co-advised with Suraj Kumar.

## TEACHING

- **Scheduling for computing systems**, master 2 course, École Normale Supérieure de Lyon, in 2008, 2011, 2012 and 2013 (24h of lectures for each session). <http://perso.ens-lyon.fr/loris.marchal/scheduling/>
- **Data-Aware Algorithms**, master 2 course, École Normale Supérieure de Lyon, in 2019 and 2020 (30h of lectures each year). <http://perso.ens-lyon.fr/loris.marchal/data-aware-algorithms.html>
- Practicals for **Introduction to programming**, bachelor course, University Lyon 1, in 2016 (24h).
- Tutorials for **Complexity and decidability**, master course, University Lyon 1, in 2017 and 2018 (16h each year).
- Practicals for **Compilation**, bachelor course, University Lyon 1, in 2019 (14h).
- Practicals for **Operating Systems**, bachelor course, University Lyon 1, in 2019 (12h).
- Mini-course on **Data-Aware Algorithms**, mini-course for PhD students in computer science, Warswa University, Poland in 2023 (7h).

## PUBLICATIONS (SORTED BY TYPE AND PUBLICATION DATE)

### Articles in international journals

- [J1] Olivier Beaumont, Arnaud Legrand, Loris Marchal, and Yves Robert. Scheduling strategies for mixed data and task parallelism on heterogeneous clusters. *Parallel Processing Letters*, 13(2):225–244, 2003.
- [J2] Arnaud Legrand, Loris Marchal, and Yves Robert. Optimizing the steady-state throughput of scatter and reduce operations on heterogeneous platforms. *J. Parallel and Distributed Computing*, 65(12):1497–1514, 2005.
- [J3] Olivier Beaumont, Arnaud Legrand, Loris Marchal, and Yves Robert. Steady-state scheduling on heterogeneous clusters. *Int. J. of Foundations of Computer Science*, 16(2):163–194, 2005.
- [J4] Olivier Beaumont, Arnaud Legrand, Loris Marchal, and Yves Robert. Pipelining broadcasts on heterogeneous platforms. *IEEE Trans. Parallel Distributed Systems*, 16(4):300–313, 2005.

- [J5] Loris Marchal, Yang Yang, Henri Casanova, and Yves Robert. Steady-state scheduling of multiple divisible load applications on wide-area distributed computing platforms. *Int. Journal of High Performance Computing Applications*, 20(3):365–381, 2006.
- [J6] Olivier Beaumont, Loris Marchal, and Yves Robert. Complexity results for collective communications on heterogeneous platforms. *Int. Journal of High Performance Computing Applications*, 20(1):5–17, 2006.
- [J7] Loris Marchal, Veronika Rehn, Yves Robert, and Frédéric Vivien. Scheduling algorithms for data redistribution and load-balancing on master-slave platforms. *Parallel Processing Letters*, 17(1):61–77, 2007.
- [J8] Olivier Beaumont, Larry Carter, Jeanne Ferrante, Arnaud Legrand, Loris Marchal, and Yves Robert. Centralized versus distributed schedulers for multiple bag-of-task applications. *IEEE Trans. Parallel Distributed Systems*, 19(5):698–709, 2008.
- [J9] Anne Benoit, Loris Marchal, Jean-François Pineau, Yves Robert, and Frédéric Vivien. Scheduling concurrent bag-of-tasks applications on heterogeneous platforms. *IEEE Transactions on Computers*, 59(2):202–217, 2010.
- [J10] Sékou Diakit , Loris Marchal, Jean-Marc Nicod, and Laurent Philippe. Practical steady-state scheduling for tree-shaped task graphs. *Parallel Processing Letters*, 21(4):397–412, 2011.
- [J11] Tudor David, Mathias Jacquelin, and Loris Marchal. Scheduling streaming applications on a complex multicore platform. *Concurrency and Computation: Practice and Experience*, 24(15):1726–1750, 2012.
- [J12] Anne Benoit, Louis-Claude Canon, and Loris Marchal. Non-clairvoyant reduction algorithms for heterogeneous platforms. *Concurrency and Computation: Practice and Experience*, 27(6):1612–1624, 2015.
- [J13] Julien Herrmann, Loris Marchal, and Yves Robert. Memory-aware tree traversals with pre-assigned tasks. *J. Parallel Distrib. Comput.*, 75:53–66, 2015.
- [J14] Thomas Lambert, Loris Marchal, and Bora U ar. Comments on the hierarchically structured bin packing problem. *Information Processing Letters*, 115(2):306–309, 2015.
- [J15] Lionel Eyraud-Dubois, Loris Marchal, Oliver Sinnen, and Frédéric Vivien. Parallel scheduling of task trees with limited memory. *ACM Transactions on Parallel Computing*, 2(2):36, July 2015.
- [J16] Julien Herrmann, George Bosilca, Thomas H erault, Loris Marchal, Yves Robert, and Jack Dongarra. Assessing the cost of redistribution followed by a computational kernel: Complexity and performance results. *Parallel Computing*, 52:20, 2016.
- [J17] Enver Kayaaslan, Thomas Lambert, Loris Marchal, and Bora U ar. Scheduling series-parallel task graphs to minimize peak memory. *Theoretical Computer Science*, 2017.
- [J18] Loris Marchal, Bertrand Simon, Oliver Sinnen, and Frédéric Vivien. Malleable task-graph scheduling with a practical speed-up model. *IEEE Trans. Parallel Distrib. Syst.*, 29(6):1357–1370, 2018.
- [J19] Loris Marchal, Bertrand Simon, and Frédéric Vivien. Limiting the memory footprint when dynamically scheduling DAGs on shared-memory platforms. *Journal of Parallel and Distributed Computing*, 128:30–42, 2019.
- [J20] Olivier Beaumont, Thomas Lambert, Loris Marchal, and Bastien Thomas. Performance analysis and optimality results for data-locality aware tasks scheduling with replicated inputs. *Future Gener. Comput. Syst.*, 111:582–598, 2020.

- [J21] Louis-Claude Canon, Loris Marchal, Bertrand Simon, and Frédéric Vivien. Online scheduling of task graphs on heterogeneous platforms. *IEEE Trans. Parallel Distrib. Syst.*, 31(3):721–732, 2020.
- [J22] Changjiang Gou, Anne Benoit, and Loris Marchal. Partitioning tree-shaped task graphs for distributed platforms with limited memory. *IEEE Trans. Parallel Distributed Syst.*, 31(7):1533–1544, 2020.
- [J23] Olivier Beaumont, Louis-Claude Canon, Lionel Eyraud-Dubois, Giorgio Lucarelli, Loris Marchal, Clément Mommessin, Bertrand Simon, and Denis Trystram. Scheduling on two types of resources: A survey. *ACM Comput. Surv.*, 53(3):56:1–56:36, 2021.
- [J24] Gabriel Bathie, Loris Marchal, Yves Robert, and Samuel Thibault. Dynamic DAG scheduling under memory constraints for shared-memory platforms. *Int. J. Netw. Comput.*, 11(1):27–49, 2021.
- [J25] Yishu Du, Loris Marchal, Guillaume Pallez, and Yves Robert. Optimal checkpointing strategies for iterative applications. *IEEE Trans. Parallel Distributed Syst.*, 33(3):507–522, 2022.
- [J26] Loris Marchal, Thibault Marette, Grégoire Pichon, and Frédéric Vivien. Trading performance for memory in sparse direct solvers using low-rank compression. *Future Gener. Comput. Syst.*, 130:307–320, May 2022.
- [J27] Changjiang Gou, Anne Benoit, Mingsong Chen, Loris Marchal, and Tongquan Wei. Mapping series-parallel streaming applications on hierarchical platforms with reliability and energy constraints. *Journal of Parallel and Distributed Computing*, 163:45–61, May 2022.
- [J28] Loris Marchal, Samuel Mccauley, Bertrand Simon, and Frédéric Vivien. Minimizing I/Os in Out-of-Core Task Tree Scheduling. *International Journal of Foundations of Computer Science*, pages 1–30, 2022.
- [J29] Maxime Gonthier, Loris Marchal, and Samuel Thibault. Taming data locality for task scheduling under memory constraint in runtime systems. *Future Gener. Comput. Syst.*, 143:305–321, 2023.

## Book chapters

- [B1] Olivier Beaumont and Loris Marchal. Steady-state scheduling. In *Introduction to Scheduling*, pages 159–186. Chapman and Hall/CRC Press, 2009.
- [B2] Anne Benoit, Loris Marchal, Yves Robert, and Frédéric Vivien. Algorithms and scheduling techniques for clusters and grids. In Wolfgang Gentzsch, Lucio Grandinetti, and Gerhard Joubert, editors, *Advances in Parallel Computing, vol.18: High Speed and Large Scale Scientific Computing*, pages 27–51. IOS Press, 2009.
- [B3] Anne Benoit, Loris Marchal, Yves Robert, Bora Uçar, and Frédéric Vivien. Scheduling for large-scale systems. In Teofilo F. Gonzalez, Jorge Diaz-Herrera, and Allen Tucker, editors, *Computing Handbook, Third Edition: Computer Science and Software Engineering*, pages 59: 1–33. CRC Press, 2014.

## Articles in international conference proceedings

- [C1] Henri Casanova, Arnaud Legrand, and Loris Marchal. Scheduling distributed applications: the simgrid simulation framework. In *IEEE International Symposium on Cluster Computing and the Grid (CCGrid)*, pages 138–145, 2003.
- [C2] Olivier Beaumont, Arnaud Legrand, Loris Marchal, and Yves Robert. Complexity results and heuristics for pipelined multicast operations on heterogeneous platforms. In *International Conference on Parallel Processing (ICPP)*, pages 267–274, 2004.

- [C3] Olivier Beaumont, Arnaud Legrand, Loris Marchal, and Yves Robert. Pipelining broadcasts on heterogeneous platforms. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2004.
- [C4] Olivier Beaumont, Loris Marchal, and Yves Robert. Scheduling divisible loads with return messages on heterogeneous master-worker platforms. In *International Conference on High Performance Computing (HiPC)*, pages 498–507, 2005.
- [C5] Loris Marchal, Pascale Primet, Yves Robert, and Jingdi Zeng. Optimizing network resource sharing in grids. In *IEEE Global Telecommunications Conference (GlobeCom)*, 2005.
- [C6] Olivier Beaumont, Loris Marchal, and Yves Robert. Broadcast trees for heterogeneous platforms. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2005.
- [C7] Loris Marchal, Yang Yang, Henri Casanova, and Yves Robert. A realistic network/application model for scheduling divisible loads on large-scale platforms. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2005.
- [C8] Olivier Beaumont, Arnaud Legrand, Loris Marchal, and Yves Robert. Independent and divisible tasks scheduling on heterogeneous star-shaped platforms with limited memory. In *13th Euromicro Conference on Parallel, Distributed and Network-based Processing (PDP)*, pages 179–186, 2005.
- [C9] Loris Marchal, Pascale Primet, Yves Robert, and Jingdi Zeng. Optimal bandwidth sharing in grid environment. In *15th International Symposium on High Performance Distributed Computing (HPDC)*, pages 144–155, 2006.
- [C10] Olivier Beaumont, Larry Carter, Jeanne Ferrante, Arnaud Legrand, Loris Marchal, and Yves Robert. Centralized versus distributed schedulers for multiple bag-of-task applications. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2006.
- [C11] Olivier Beaumont, Anne-Marie Kermarrec, Loris Marchal, and Etienne Rivière. Voronet: A scalable object network based on voronoi tessellations. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2007.
- [C12] Loris Marchal, Veronika Rehn, Yves Robert, and Frédéric Vivien. Scheduling and data redistribution strategies on star platforms. In *15th Euromicro Conference on Parallel, Distributed and Network-based Processing (PDP)*, pages 288–295, 2007.
- [C13] Matthieu Gallet, Loris Marchal, and Frédéric Vivien. Allocating series of workflows on computing grids. In *14th IEEE International Conference on Parallel and Distributed Systems (ICPADS)*, pages 48–55, 2008.
- [C14] Matthieu Gallet, Loris Marchal, and Frédéric Vivien. Efficient scheduling of task graph collections on heterogeneous resources. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2009.
- [C15] Sékou Diakité, Loris Marchal, Jean-Marc Nicod, and Laurent Philippe. Steady-state for batches of identical task graphs. In *15th International Euro-Par Conference*, pages 203–215, 2009.
- [C16] Mathias Jacquelin, Loris Marchal, and Yves Robert. Complexity analysis and performance evaluation of matrix product on multicore architectures. In *International Conference on Parallel Processing (ICPP)*, pages 196–203, 2009.
- [C17] Javier Celaya and Loris Marchal. A fair decentralized scheduler for bag-of-tasks applications on desktop grids. In *10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID)*, pages 538–541, 2010.

- [C18] Anne Benoit, Loris Marchal, Oliver Sinnen, and Yves Robert. Mapping pipelined applications with replication to increase throughput and reliability. In *22nd International Symposium on Parallel and Distributed Computing (SBAC-PAD)*, 2010.
- [C19] Mathias Jacquelin, Loris Marchal, Yves Robert, and Bora Uçar. On optimal tree traversals for sparse matrix factorization. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pages 556–567, 2011.
- [C20] Franck Cappello, Mathias Jacquelin, Loris Marchal, Yves Robert, and Marc Snir. Comparing archival policies for BlueWaters. In *International Conference on High Performance Computing (HiPC'2011)*, 2011.
- [C21] Olivier Beaumont, Nicolas Bonichon, Lionel Eyraud-Dubois, and Loris Marchal. Minimizing weighted mean completion time for malleable tasks scheduling. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pages 273–284, 2012.
- [C22] Loris Marchal, Oliver Sinnen, and Frédéric Vivien. Scheduling tree-shaped task graphs to minimize memory and makespan. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pages 839–850, 2013.
- [C23] Julien Herrmann, Loris Marchal, and Yves Robert. Model and complexity results for tree traversals on hybrid platforms. In *19th International Euro-Par Conference*, pages 647–658, 2013.
- [C24] Olivier Beaumont, Hubert Larchevêque, and Loris Marchal. Non linear divisible loads: There is no free lunch. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, pages 863–873, 2013.
- [C25] Thomas Héroult, Julien Herrmann, Loris Marchal, and Yves Robert. Determining the optimal redistribution for a given data partition. In *IEEE 13th International Symposium on Parallel and Distributed Computing, (ISPDC)*, pages 95–102, 2014.
- [C26] Olivier Beaumont and Loris Marchal. Analysis of dynamic scheduling strategies for matrix multiplication on heterogeneous platforms. In *23rd International ACM Symposium on High-Performance Parallel and Distributed Computing (HPDC)*, pages 141–152, 2014.
- [C27] Abdou Guermouche, Loris Marchal, Bertrand Simon, and Frédéric Vivien. Scheduling Trees of Malleable Tasks for Sparse Linear Algebra. In *International European Conference on Parallel and Distributed Computing (Euro-Par 2015)*, 2015.
- [C28] Guillaume Aupy, Clément Brasseur, and Loris Marchal. Dynamic Memory-Aware Task-Tree Scheduling. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2017.
- [C29] Louis-Claude Canon, Loris Marchal, and Frédéric Vivien. Low-Cost Approximation Algorithms for Scheduling Independent Tasks on Hybrid Platforms. In *International European Conference on Parallel and Distributed Computing (Euro-Par 2017)*, 2017.
- [C30] Anne Benoit, Changjiang Gou, and Loris Marchal. Memory-aware tree partitioning on homogeneous platforms. In *26th Euromicro International Conference on Parallel, Distributed and Network-based Processing (PDP)*, 2018. Short paper.
- [C31] Loris Marchal, Hanna Nagy, Bertrand Simon, and Frédéric Vivien. Parallel scheduling of DAGs under memory constraints. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, 2018.
- [C32] Louis-Claude Canon, Loris Marchal, Bertrand Simon, and Frédéric Vivien. Online scheduling of task graphs on hybrid platforms. In *International European Conference on Parallel and Distributed Computing (Euro-Par 2018)*, pages 192–204, 2018.

- [C33] Changjiang Gou, Anne Benoit, Mingsong Chen, Loris Marchal, and Tongquan Wei. Reliability-aware energy optimization for throughput-constrained applications on MPSoC. In *ICPADS - 24th International Conference on Parallel and Distributed Systems*, pages 1–10, Sentosa, Singapore, December 2018. IEEE.
- [C34] Changjiang Gou, Ali Al Zoobi, Anne Benoit, Mathieu Faverge, Loris Marchal, Grégoire Pichon, and Pierre Ramet. Improving mapping for sparse direct solvers - A trade-off between data locality and load balancing. In *International European Conference on Parallel and Distributed Computing (Euro-Par 2020)*, pages 167–182. Springer, 2020.
- [C35] Yishu Du, Loris Marchal, Guillaume Pallez Aupy, and Yves Robert. Robustness of the young/daly formula for stochastic iterative applications. In José Nelson Amaral, Lizy Kurian John, and Xipeng Shen, editors, *International Conference on Parallel Processing (ICPP 2020)*, pages 15:1–15:11. ACM, 2020.
- [C36] Changjiang Gou, Anne Benoit, Mingsong Chen, Loris Marchal, and Tongquan Wei. Reliable and energy-aware mapping of streaming series-parallel applications onto hierarchical platforms. In *International Symposium on Computer Architecture and High Performance Computing (SBAC-PAD 2020)*, pages 116–123. IEEE, 2020.
- [C37] Sonia Ben Mokhtar, Louis-Claude Canon, Anthony Dugois, Loris Marchal, and Etienne Rivière. Taming tail latency in key-value stores: A scheduling perspective. In *International European Conference on Parallel and Distributed Computing (Euro-Par 2021)*, pages 136–150. Springer, 2021.
- [C38] Anne Benoit, Yishu Du, Thomas Herault, Loris Marchal, Guillaume Pallez, Lucas Perotin, Yves Robert, Hongyang Sun, and Frédéric Vivien. Checkpointing à la young/daly: An overview. In *IC3 2022 - 2022 Fourteenth International Conference on Contemporary Computing*, pages 701–710, Noida, India, August 2022. ACM.
- [C39] Louis-Claude Canon, Anthony Dugois, and Loris Marchal. Bounding the flow time in online scheduling with structured processing sets. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*. IEEE, 2022.
- [C40] Maxime Gonthier, Loris Marchal, and Samuel Thibault. Memory-Aware Scheduling of Tasks Sharing Data on Multiple GPUs with Dynamic Runtime Systems. In *IEEE International Parallel and Distributed Processing Symposium (IPDPS)*. IEEE, 2022.
- [C41] Louis-Claude Canon, Anthony Dugois, Loris Marchal, and Etienne Rivière. Hector: A framework to design and evaluate scheduling strategies in persistent key-value stores. In *Proceedings of the 52nd International Conference on Parallel Processing (ICPP)*, pages 535–545. ACM, 2023.

### Articles in international workshop proceedings

- [W1] Arnaud Legrand, Loris Marchal, and Yves Robert. Optimizing the steady-state throughput of scatter and reduce operations on heterogeneous platforms. In *6th Workshop on Advances in Parallel and Distributed Computational Models (APDCM, workshop of IPDPS)*, 2004.
- [W2] Olivier Beaumont, Arnaud Legrand, Loris Marchal, and Yves Robert. Steady-state scheduling on heterogeneous clusters: why and how? In *6th Workshop on Advances in Parallel and Distributed Computational Models (APDCM, workshop of IPDPS)*, 2004.
- [W3] Olivier Beaumont, Arnaud Legrand, Loris Marchal, and Yves Robert. Assessing the impact and limits of steady-state scheduling for mixed task and data parallelism on heterogeneous platforms. In *HeteroPar (workshop of Euro-Par)*, pages 296–302, 2004.

- [W4] Olivier Beaumont, Loris Marchal, Veronika Rehn, and Yves Robert. FIFO scheduling of divisible loads with return messages under the one-port model. In *15th Heterogeneous Computing Workshop (HCW, workshop of IPDPS)*, 2006.
- [W5] Jack DiGiovanna, Loris Marchal, Prapaporn Rattanatamrong, Ming Zhao, Shalom Darmanjian, Babak Mahmoudi, Justin Sanchez, José Príncipe, Linda Hermer-Vazquez, Renato Figueiredo, and José Fortes. Towards real-time distributed signal modeling for brain machine interfaces. In *Proceedings of Dynamic Data Driven Application Systems (workshop of ICCS)*, volume 4487 of *LNCS*, pages 964–971, 2007.
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