FRÉDÉRIC SUTER – C.V.

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1 EDUCATION

HDR – Habilitation à Diriger des Recherches, Computer Science, École Normale Supérieure de Lyon, France, **2014**

Dissertation: *Bridging a Gap Between Research and Production: Contributions to Scheduling and Simulation*.

Ph.D. – Computer Science, École Normale Supérieure de Lyon, France, **2002**

Dissertation: *Mixed Parallelism and Performance Prediction on Heterogeneous Networks of Parallel Computers.*
Advisor: Frédéric Desprez

M.S. – Diplôme d'Études Approfondies (DEA) in Combinatorics, Parallelism, and Random Modeling, Université de Picardie Jules Verne, Amiens, France, 1999.

Dissertation: *Large Scale Data Handling Environments*.
Advisors: Prof. Gil Utard and Prof. Dominique Lazure

2 RESEARCH INTERESTS

High performance computing, parallel and distributed computing, scientific workflows, agentic workflows, parallel application scheduling, batch scheduling, performance prediction, simulation of distributed applications and platforms.

3 PROFESSIONAL EXPERIENCE

02/22 – : Senior Research Scientist, Workflow Systems Group, Oak Ridge National Laboratory, Oak Ridge, TN

10/19 – 02/22: CNRS Senior Researcher, IN2P3 Computing Center, Lyon, France.

10/08 – 09/19: CNRS Junior Researcher, IN2P3 Computing Center, Lyon, France.

12/04 – 09/08: Assistant Professor, Computer Science Department, Université Henri Poincaré, Nancy, France.

09/04 – 10/04: Postdoctoral Research Associate, Computer Science, Laboratoire de l'Informatique du Parallélisme, Lyon, France.

09/03 – 08/04: Temporary Assistant Professor, Computer Science, Université Joseph Fourier, Grenoble, France.

11/02 – 08/03: Postdoctoral Research Associate, Computer Science, University of California, San Diego, U.S.A.

10/99 – 11/02: Ph.D. student, Computer Science, Laboratoire de l'Informatique du Parallélisme, Lyon, France.

4 PUBLICATIONS

4.1 Journal Articles

[1] Frédéric Suter, Tainã Coleman, Ílkay Altintas, Rosa M. Badia, Bartosz Balis, Kyle Chard, Iacopo Colonnelli, Ewa Deelman, Paolo Di Tommaso, Thomas Fahringer, Carole Goble, Shantenu Jha, Daniel S. Katz, Johannes Köster, Ulf Leser, Kshitij Mehta, Hilary Oliver, J.-Luc Peterson, Giovanni Pizzi, Loïc Pottier, Raül Sirvent, Eric Suchyta, Douglas Thain, Sean R. Wilkinson, Justin M. Wozniak, and Rafael Ferreira da Silva. A Terminology for Scientific Workflow Systems. *Future Generation Computer Systems*, 174:107974, January 2026.

[2] Shengyu Feng, Jaehyung Kim, Yiming Yang, Joseph Boudreau, Tasnuva Chowdhury, Adolfy Hoisie, Raees Khan, Ozgur O. Kilic, Scott Klasky, Tatiana Korchuganova, Paul Nilsson, Verena Ingrid Martinez Outschoorn, David K. Park, Norbert Podhorszki, Yihui Ren, Frédéric Suter, Sairam Sri Vatsavai, Wei Yang, Shinjae Yoo, Tadashi Maeno, and Alexei Klimentov. Alternative Mixed Integer Linear Programming Optimization for Joint Job Scheduling and Data Allocation in Grid Computing. *Future Generation Computer Systems*, 175:108075, February 2026.

[3] Ozgur O. Kilic, David K. Park, Yihui Ren, Tatiana Korchuganova, Sairam Sri Vatsavai, Joseph Boudreau, Tasnuva Chowdhury, Shengyu Feng, Raees Khan, Jaehyung Kim, Scott Klasky, Tadashi Maeno, Paul Nilsson, Verena Ingrid Martinez Outschoorn, Norbert Podhorszki, Frédéric Suter, Wei Yang, Yiming Yang, Shinjae Yoo, Alexei Klimentov, and Adolfy Hoisie. Towards an Introspective Dynamic Model of Globally Distributed Computing Infrastructures. *EPJ Web of Conference – Proceedings of the 27th International Conference on Computing in High Energy and Nuclear Physics*, 337:01082, 2025.

[4] Henri Casanova, Arnaud Giersch, Arnaud Legrand, Martin Quinson, and Frédéric Suter. Lowering Entry Barriers to Developing Custom Simulators of Distributed Applications and Platforms with SimGrid. *Parallel Computing*, 123:103125, 2025.

[5] Rafael Ferreira da Silva, Rosa M. Badia, Deborah Bard, Ian T. Foster, Shantenu Jha, and Frédéric Suter. Frontiers in Scientific Workflows: Pervasive Integration with HPC. *IEEE Computer*, 57(8), 2024.

[6] Tchimou N'takpé, Jean Edgard Gnimassoun, Souleymane Oumtanaga, and Frédéric Suter. Data-Aware and Simulation-Driven Planning of Scientific Workflows on IaaS Clouds. *Concurrency and Computation: Practice and Experience*, 34:e6719, 2022.

[7] Rafael Ferreira da Silva, Henri Casanova, Anne-Cécile Orgerie, Ryan Tanaka, Ewa Deelman, and Frédéric Suter. Characterizing, Modeling, and Accurately Simulating Power and Energy Consumption of I/O-intensive Scientific Workflows. *Journal of Computational Science*, 44:101157, July 2020.

[8] Henri Casanova, Rafael Ferreira da Silva, Ryan Tanaka, Suraj Pandey, Gautam Jethwani, Spencer Albrecht, James Oeth, and Frédéric Suter. Developing Accurate and Scalable Simulators of Production Workflow Management Systems with WRENCH. *Future Generation Computer Systems*, 112:162–175, 2020. **(Core: A)**.

[9] Augustin Degomme, Arnaud Legrand, George Markomanolis, Martin Quinson, Mark Stillwell, and Frédéric Suter. Simulating MPI applications: the SMPI approach. *IEEE Transactions on Parallel and Distributed Systems*, 18(8):2387–2400, 2017. **(Core: A*)**.

[10] Henri Casanova, Anshul Gupta, and Frédéric Suter. Toward More Scalable Off-Line Simulations of MPI Applications. *Parallel Processing Letters*, 25(3):1541002, September 2015. **(Core: B)**.

[11] Henri Casanova, Frédéric Desprez, George S. Markomanolis, and Frédéric Suter. Simulation of MPI Applications with Time-Independent Traces. *Concurrency and Computation: Practice and Experience*, 27(5):1145–1168, April 2015. **(Core: A)**.

[12] Henri Casanova, Arnaud Giersch, Arnaud Legrand, Martin Quinson, and Frédéric Suter. Versatile, Scalable, and Accurate Simulation of Distributed Applications and Platforms. *Journal of Parallel and Distributed Computing*, 74(10):2899 – 2917, 2014. **(Core: A*)**.

[13] Gabriel Antoniu, Alexandru Costan, Julien Bigot, Frédéric Desprez, Gilles Fedak, Sylvain Gault, Christian Pérez, Anthony Simonet, Bing Tang, Christophe Blanchet, Raphael Terreux, Luc Bougé, François Briant, Franck Cappello, Kate Keahey, Bogdan Nicolae, and Frédéric Suter. Scalable Data Management for Map–Reduce–Based Data–Intensive Applications: a View for Cloud and Hybrid Infrastructures. *International Journal of Cloud Computing*, 2(2-3):150–170, 2013.

[14] Henri Casanova, Frédéric Desprez, and Frédéric Suter. On Cluster Resource Allocation for Multiple Parallel Task Graphs. *Journal of Parallel and Distributed Computing*, 70(12):1193–1203, December 2010. **(Core: A*)**.

[15] Pierre-François Dutot, Tchimou N'takpé, Frédéric Suter, and Henri Casanova. Scheduling Parallel Task Graphs on (Almost) Homogeneous Multi-cluster Platforms. *IEEE Transactions on Parallel and Distributed Systems*, 20(7):940–952, July 2009. **(Core: A*)**.

[16] Frédéric Desprez and Frédéric Suter. Impact of Mixed-Parallelism on Parallel Implementations of Strassen and Winograd Matrix Multiplication Algorithms. *Concurrency and Computation:Practice and Experience*, 16(8):771–797, July 2004. **(Core: A)**.

[17] Eddy Caron, Frédéric Desprez, Martin Quinson, and Frédéric Suter. Performance Evaluation of Linear Algebra Routines. *International Journal of High Performance Computing Applications*, 18(3):373–390, 2004. **(Core: B)**.

[18] Eddy Caron, Frédéric Desprez, and Frédéric Suter. Parallel Extension of a Dynamic Performance Forecasting Tool. *Scalable Computing: Practice and Experience*, 6(1):57–69, March 2003. Special issue on selected papers of ISPDC'02.

[19] Eddy Caron, Serge Chaumette, Sylvain Contassot-Vivier, Frédéric Desprez, Eric Fleury, Claude Gomez, Maurice Goursat, Emmanuel Jeannot, Dominique Lazure, Fréderic Lombard, Jean-Marc Nicod, Laurent Philippe, Martin Quinson, Pierre Ramet, Jean Roman, Franck Rubi, Serge Steer, Frédéric Suter, and Gil Utard. Scilab to Scilab//, the OURAGAN Project. *Parallel Computing*, 27(11):1497–1519, October 2001. **(Core: A)**.

4.2 Book Chapters

[1] Hamid Arabnejad, Jorge Barbosa, and Frédéric Suter. *High-Performance Computing on Complex Environments*, chapter Fair Resource Sharing for Dynamic Scheduling of Workflows on Heterogeneous Systems, pages 147–168. Parallel and Distributed Computing Series. John Wiley & Sons, June 2014.

4.3 Refereed Conference and Workshop Proceedings

[1] Frédéric Suter. A Versatile Simulated Data Transport Layer for In Situ Workflows Performance Evaluation. In *Proceedings of the 27th IEEE International Conference on Cluster Computing*, Cluster, Edinburgh, Scotland, September 2025.

[2] Sairam Sri Vatsavai, Raees Khan Ahmed, Kuan-Chieh Hsu, Ozgur Kilic, Yihui (Ray) Ren, David Park, Paul Nilsson, Tania Korchuganova, Sankha Dutta, Joseph Boudreau, Tasnuva Chowdhury, Shengyu Feng, Fatih Furkan Akman, Adolfy Hoisie, Scott Klasky, Tadashi Maeno, Verena Ingrid Martinez Outschoorn, Norbert Podhorszki, Frédéric Suter, John Rembrandt (Remy) Steele, Wei Yang, Yiming Yang, Shinjae Yoo, and Alexei Klimentov. CGSim: A Simulation Framework for Large Scale Distributed Computing Environment. In *Proceedings of the 16th International Workshop on Performance Modeling, Benchmarking and Simulation of High Performance Computer Systems*, page 1478–1483, Saint Louis, MO, 2025. Association for Computing Machinery. **Best Short Paper Award**.

[3] Woong Shin, Renan Souza, Daniel Rosendo, Frédéric Suter, Feiyi Wang, Prasanna Balaprakash, and Rafael Ferreira da Silva. The (R)evolution of Scientific Workflows in the Agentic AI Era: Towards Autonomous Science. In *Proceedings of the 20th Workshop on Workflows in Support of Large-Scale Science*, page 2305–2316, Saint Louis, MO, 2025. Association for Computing Machinery. **Distinguished Paper Award**.

[4] Kshitij Mehta, Eric Suchyta, Frédéric Suter, Ana Gainaru, Norbert Podhorszki, and Scott Klasky. Enabling Command-and-Control in Advanced In Situ Workflows. In *Proceedings of the first Workshop on Workflows, Intelligent Scientific Data, and Optimization for Automated Management*, San Diego, CA, September 2025.

[5] Jesse McDonald, Yick-Ching Wong, Kshitij Mehta, Frederic Suter, Rafael Ferreira Da Silva, Loic Pottier, Ewa Deelman, and Henri Casanova. Determining Levels of Detail for Simulators of Parallel and Distributed Computing Systems via Automated Calibration. In *Proceedings of the 16th International Workshop on Performance Modeling, Benchmarking and Simulation of High Performance Computer Systems*, page 1452–1463, Saint Louis, MO, 2025. Association for Computing Machinery.

[6] Ketan Maheshwari, Anderson Borch, Jordan Webb, Brian Etz, Ross Miller, Frédéric Suter, Sarp Oral, and Rafael Ferreira da Silva. Evaluating HPC Scheduling Strategies for Urgent Workloads. In *Proceedings of the 6th Combined Workshop on Interactive and Urgent High-Performance Computing*, page 2151–2160, Saint Louis, MO, 2025. Association for Computing Machinery.

[7] Yi Ju, Nicolas Vidal, Adalberto Perez, Ana Gainaru, Frédéric Suter, Stefano Markidis, Philipp Schlatter, Scott Klasky, and Erwin Laure. A Performance Model of In-Situ Techniques. In *Proceedings of the 33rd Euromicro International Conference on Parallel, Distributed and Network-Based Processing*, pages 209–216, Torino, Italy, Mar 2025.

[8] Kuan-Chieh Hsu, Sairam Sri Vatsavai, Ozgur O. Kilic, Sankha Dutta, Yihui (Ray) Ren, David Park, Tania Korchuganova, Joseph Boudreau, Tasnuva Chowdhury, Shengyu Feng, Raees Ahmad Khan, Jaehyung Kim, Norbert Podhorszki, Scott Klasky, Tadashi Maeno, Paul Nilsson, Verena Ingrid Martinez Outschoorn, Frédéric Suter, Wei Yang, Yiming Yang, Shinjae Yoo, Alexei Klimentov, and Adolfy Hoisie. Data Management System Analysis for Distributed Computing Workloads. In *Proceedings of the 11th International Workshop on Data Analysis and Reduction for Big Scientific Data*, page 279–289, Saint Louis, MO, 2025. Association for Computing Machinery.

[9] Rafael Ferreira da Silva, Milad Abolhasani, Dionysios A Antonopoulos, Laura Biven, Ryan Coffee, Ian T Foster, Leslie Hamilton, Shantenu Jha, Theresa Mayer, Benjamin Mintz, Robert Moore, Salahudin Nimer, Noah Paulson, Woong Shin, Frédéric Suter, Mitra Taheri, Michela Taufer, and Newell R. Washburn. A Grassroots Network and Community Roadmap for Interconnected Autonomous Science Laboratories for Accelerated Discovery. In *Proceedings of the first Workshop on Workflows, Intelligent Scientific Data, and Optimization for Automated Management*, San Diego, CA, September 2025.

[10] Sankha Dutta, Ozgur Kilic, Tatiana Korchuganova, Paul Nilsson, Sairam Sri Vatsavai, Kuan-Chieh Hsu, David K. Park, Joseph Boudreau, Tasnuva Chowdhury, Feng Shengyu, Raees Khan, Jaehyung Kim, Scott Klasky, Tadashi Maeno, Verena Ingrid Martinez Outschoorn, Norbert Podhorszki, Yihui Ren, Frédéric Suter, Wei Yang, Yiming Yang, Shinjae Yoo, Alexei Klimentov, and Adolfy Hoisie. Error Analysis of Globally Distributed Workflow Management System. In *Proceedings of the 7th Workshop on Emerging Parallel and Distributed Systems and Middleware*, page 968–976, Saint Louis, MO, 2025. Association for Computing Machinery.

[11] Frédéric Suter, Norbert Podhorszki, and Scott Klasky. Towards Resilient Near Real-Time Analysis Workflows in Fusion Energy Science. In *Proceedings of the First International Workshop on on Near Real-time Data Processing for Interconnected Scientific Instruments*, Osaka, Japan, 2024.

[12] Renan Souza, Silvina Caino-Lores, Mark Coletti, Tyler Skluzacek, Alexandru Costan, Frédéric Suter, Marta Mattoso, and Rafael Ferreira da Silva. Workflow Provenance in the Computing Continuum for Responsible, Trustworthy, and Energy-Efficient AI. In *Proceedings of the 4th Workshop on Reproducible Workflows, Data Management, and Security*, Osaka, Japan, 2024.

[13] Tyler J. Skluzacek, Renan Souza, Mark Coletti, Frédéric Suter, and Rafael Ferreira da Silva. Towards Cross-Facility Workflows Orchestration through Distributed Automation. In *Practice and Experience in Advanced Research Computing 2024: Human Powered Computing (PEARC'24)*, Providence, RI, 2024.

[14] Kshitij Mehta, Massimiliano Lupo Pasini, Stephan Irle, Pilsun Yoo, Frédéric Suter, Dmitry Ganuyshin, and Scott Klasky. Scaling Ensembles of Data-Intensive Quantum Chemical Calculations for Millions of Molecules. In *Proceedings of the 25th IEEE International Workshop on Parallel and Distributed Scientific and Engineering Computing (PDSEC)*, PDSEC, San Francisco, CA, May 2024.

[15] Jesse McDonald, Maximilian Horzela, Frédéric Suter, and Henri Casanova. Automated Calibration of Parallel and Distributed Computing Simulators: A Case Study. In *Proceedings of the 25th IEEE International Workshop on Parallel and Distributed Scientific and Engineering Computing (PDSEC)*, PDSEC, San Francisco, CA, May 2024.

[16] Ketan Maheshwari, William Arndt, Ahmad Maroof Karimi, Junqi Yin, Frédéric Suter, Seth Johnson, and Rafael Ferreira da Silva. Enabling low-overhead ht-hpc workflows at extreme scale using gnu parallel. In *Proceedings of the 19th Workshop on Workflows in Support of Large-Scale Science (WORKS)*, Atlanta, GA, Nov 2024.

[17] Frédéric Suter, Rafael Ferreira Da Silva, Ana Gainaru, and Scott Klasky. Driving Next-Generation Workflows from the Data Plane. In *Proceedings of the IEEE 19th International Conference on e-Science (e-Science)*, pages 1–10, Limassol, Cyprus, October 2023.

[18] Maximilian Horzela, Henri Casanova, Manuel Giffels, Artur Gottman, Robin Hofsaess, Günter Quast, Simone Rossi Tisbeni, and Achim Streit. Modeling Distributed Computing Infrastructures for HEP Applications. In *Proceedings of the 26th International Conference on Computing in High Energy and Nuclear Physics (CHEP)*, volume 295, 2023.

[19] Eric Suchyta, Jong Youl Choi, Seung-Hoe Ku, David Pugmire, Ana Gainaru, Kevin Huck, Ralph Kube, Aaron Scheinberg, Frédéric Suter, Choongseock Chang, Todd Munson, Norbert Podhorszki, and Scott Klasky. Hybrid Analysis of Fusion Data for Online Understanding of Complex Science on Extreme Scale Computers. In *Proceedings of the 24th IEEE Cluster Conference*, pages 218–229, Heidelberg, Germany, September 2022.

[20] Kshitij Mehta, Ashley Cliff, , Frédéric Suter, Angelica Walker, Matthew Wolf, Daniel Jacobson, and Scott Klasky. Running Ensemble Workflows at Extreme Scale: Lessons Learned and Path Forward. In *Proceedings of the 18th IEEE International eScience Conference*, pages 284 – 294, Salt Lake City, UT, October 2022.

[21] Valentin Honoré, Bertrand Simon, and Frédéric Suter. An Exact Algorithm for the Linear Tape Scheduling Problem. In *Proceedings of the International Conference on Automated Planning and Scheduling*, volume 32, pages 151–159, June 2022.

[22] Valentin Honoré, Tu Mai Ahn Do, Loïc Pottier, Rafael Ferreira da Silva, Ewa Deelman, and Frédéric Suter. SimSitu: A Framework for the Faithful Simulation of in situ Processing. In *Proceedings of the 18th IEEE International eScience Conference*, pages 182–191, Salt Lake City, UT, October 2022.

[23] Tainã Coleman, Henri Casanova, Ketan Maheshwari, Loïc Pottier, Sean R. Wilkinson, Justin Wozniak, Frédéric Suter, Mallikarjun Shankar, and Rafael Ferreira da Silva. WfBench: Automated Generation of Scientific Workflow Benchmarks. In *Proceedings of the 13th International Workshop on Performance Modeling, Benchmarking and Simulation of High Performance Computer Systems (PMBS)*, pages 100–111, Dallas, TX, November 2022.

[24] Louise Harding, Fabien Wernli, and Frédéric Suter. Sequence-RTG:Efficient and Production-Ready Pattern Mining in System Log Messages. In *Proceedings of the 8th Workshop on Monitoring and Analysis for High Performance Computing Systems Plus Applications (HPCMASPA)*, pages 623–631, Portland, OR, September 2021.

[25] Luc Gombert and Frédéric Suter. Learning-based Approaches to Estimate Job Wait Time in HTC Datacenters. In Dalibor Klusáček, Walfredo Cirne, and Narayan Desai, editors, *Proceedings of the 24th Workshop on Job Scheduling Strategies for Parallel Processing*, volume 12985 of *Lecture Notes in Computer Science*, pages 101–125, Portland, OR, May 2021. Springer International Publishing.

[26] Dalibor Klusacek, Mehmet Soysal, and Frédéric Suter. Alea - Complex Job Scheduling Simulator. In *Proceedings of the 13th International Conference on Parallel Processing and Applied Mathematics (PPAM)*, volume 12044 of *Lecture Notes in Computer Science*, pages 217 – 229, Bialystok, Poland, September 2019. Springer.

[27] Rafael Ferreira da Silva, Anne-Cécile Orgerie, Henri Casanova, Ryan Tanaka, Ewa Deelman, and Frédéric Suter. Accurately Simulating Energy Consumption of I/O-intensive Scientific Workflows. In *Proceedings of the International Conference on Computational Science (ICCS)*, volume 11536 of *Lecture Notes in Computer Science*, pages 138–152, Faro, Portugal, June 2019. Springer. **(Core: A, acceptance rate: 28.5% [65/228])**.

[28] Rafael Ferreira da Silva, Henri Casanova, Ryan Tanaka, and Frédéric Suter. Bridging Concepts and Practice in eScience via Simulation-driven Engineering. In *Proceedings of Bridging from Concepts to Data and Computation for eScience (BC2DC), in conjunction with the 15th eScience International Conference*, pages 609–614, San Diego, CA, September 2019.

[29] Frédéric Azevedo, Dalibor Klusacek, and Frédéric Suter. Improving Fairness in a Large Scale HTC System Through Workload Analysis and Simulation. In *Proceedings of the 25th International Euro-Par Conference (Euro-Par)*, volume 11725 of *Lecture Notes in Computer Science*, pages 129–141, Göttigen, Germany, August 2019. Springer. **(Core: A, acceptance rate: 25.4% [36/142])**.

[30] Anchen Chai, Sorina Camarasu-Pop, Tristan Glatard, Hugues Benoit-Cattin, and Frédéric Suter. Evaluation through Realistic Simulations of File Replication Strategies for Large Heterogeneous Distributed Systems. In *Proceedings of the 16th International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Platforms (HeteroPar)*, Turin, Italy, August 2018. **Best Workshop Paper Award**.

[31] Henri Casanova, Suraj Pandey, James Oeth, Ryan Tanaka, Frédéric Suter, and Rafael Ferreira da Silva. WRENCH: Workflow Management System Simulation Workbench. In *Proceedings of the 13th Workshope on Workflows in Support of Large-Scale Science (WORKS)*, Dallas, TX, November 2018.

[32] Henri Casanova, Arnaud Legrand, Martin Quinson, and Frédéric Suter. SMPI Courseware: Teaching Distributed-Memory Computing with MPI in Simulation. In *Proceedings of the Workshop on Education for High-Performance Computing (EduHPC)*, Dallas, TX, November 2018. **Best Paper Award**.

[33] Frédéric Azevedo, Luc Gombert, and Frédéric Suter. Reducing the Human-in-the-Loop Component of the Scheduling of Large HTC Workloads. In Dalibor Klusáček, Walfredo Cirne, and Narayan Desai, editors, *Proceedings of the 22nd Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP)*, volume 11332 of *Lecture Notes in Computer Science*, pages 39–60, Vancouver, Canada, May 2018. Springer International Publishing.

[34] Tchimou N'Takpé and Frédéric Suter. Don't Hurry be Happy: a Deadline-based Backfilling Approach. In Dalibor Klusáček, Walfredo Cirne, and Narayan Desai, editors, *Proceedings of the 21st Workshop on Job Scheduling Strategies for Parallel Processing (JSSPP)*, volume 10773 of *Lecture Notes in Computer Science*, pages 62–82, Orlando, FL, June 2017. Springer International Publishing.

[35] Anchen Chai, Mohammad-Mahdi Bazm, Sorina Camarasu-Pop, Tristan Glatard, Hugues Benoit-Cattin, and Frédéric Suter. Modeling Distributed Platforms from Application Traces for Realistic File Transfer Simulation. In *Proceedings of the 17th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, April 2017. **(Core: A, acceptance rate: 23% [64/280])**.

[36] Adrien Lèbre, Arnaud Legrand, Frédéric Suter, and Pierre Veyre. Adding Storage Simulation Capacities to the SimGrid Toolkit: Concepts, Models, and API. In *Proceedings of the 15th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, Shenzen, China, May 2015. **(Core: A, acceptance rate: 25.7% [69/268])**.

[37] Henri Casanova, Arnaud Giersch, Arnaud Legrand, Martin Quinson, and Frédéric Suter. SimGrid: a Sustained Effort for the Versatile Simulation of Large Scale Distributed Systems. In *Proceedings of the 1st Workshop on Sustainable Software for Science: Practice and Experiences (WSSSPE)*, November 2013.

[38] Paul Bédaride, Augustin Degomme, Stéphane Genaud, Arnaud Legrand, George S. Markomanolis, Martin Quinson, Mark Stillwell, Frédéric Suter, and Brice Videau. Toward Better Simulation of MPI Applications on Ethernet/TCP Networks. In *Proceedings of the 4th International Workshop on Performance Modeling, Benchmarking and Simulation of High Performance Computer Systems (PMBS)*, November 2013.

[39] Frédéric Desprez, George S. Markomanolis, and Frédéric Suter. Improving the Accuracy and Efficiency of Time-Independent Trace Replay. In *Proceedings of the 3rd International Workshop on Performance Modeling, Benchmarking and Simulation of High Performance Computer Systems (PMBS)*, November 2012.

[40] Eddy Caron, Frédéric Desprez, Adrian Muresan, and Frédéric Suter. Budget Constrained Resource Allocation for Non-Deterministic Worflows on an IaaS Cloud. In *Proceedings of the 12th International Conference on Algorithms and Architectures for Parallel Processing (ICA3PP)*, volume 7439 of *Lecture Notes in Computer Science*, pages 186–201, Fukuoka, Japan, September 2012. Springer.

[41] Laurent Bobelin, Arnaud Legrand, David Alejandro González Márquez, Pierre Navarro, Martin Quinson, Frédéric Suter, and Christophe Thiery. Scalable Multi-Purpose Network Representation for Large Scale Distributed System Simulation. In *Proceedings of the 12th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, pages 220–227, Ottawa, Canada, May 2012. **(Core: A, acceptance rate: 27.5% [83/308])**.

[42] Gabriel Antoniu, Julien Bigot, Christophe Blanchet, Luc Bougé, François Briant, Franck Cappello, Alexandru Costan, Frédéric Desprez, Gilles Fedak, Sylvain Gault, Kate Keahey, Bogdan Nicolae, Christian Pérez, Anthony

Simonet, Frédéric Suter, Bing Tang, and Raphael Terreux. Towards Scalable Data Management for Map-Reduce-based Data-Intensive Applications on Cloud and Hybrid Infrastructures. In *Proceedings of the First International IBM Cloud Academy Conference (ICA CON)*, pages 272–290, Research Triangle Park, NC, April 2012.

[43] Sascha Hunold, Henri Casanova, and Frédéric Suter. From Simulation to Experiment: A Case Study on Multiprocessor Task Scheduling. In *Proceedings of the 13th Workshop on Advances in Parallel and Distributed Computational Models (APDCM)*, pages 660–667, Anchorage, AK, May 2011.

[44] Frédéric Desprez, George S. Markomanolis, Martin Quinson, and Frédéric Suter. Assessing the Performance of MPI Applications Through Time-Independent Trace Replay. In *Proceedings of the 2nd International Workshop on Parallel Software Tools and Tool Infrastructures (PSTI)*, pages 467–476, September 2011.

[45] Pierre-Nicolas Clauss, Mark Stillwell, Stéphane Genaud, Frédéric Suter, Henri Casanova, and Martin Quinson. Single Node On-Line Simulation of MPI Applications with SMPI. In *Proceedings of the 25th IEEE International Parallel and Distributed Processing Symposium (IPDPS)*, Anchorage, AK, May 2011. **(Core: A, acceptance rate: 19.6% [112/571])**.

[46] Martin Quinson, Laurent Bobelin, and Frédéric Suter. Synthesizing Generic Experimental Environments for Simulation. In *Proceedings of the 5th International Conference on P2P, Parallel, Grid, Cloud and Internet Computing (3PGCIC)*, pages 222–229, Fukuoka, Japan, November 2010.

[47] Sascha Hunold, Ralf Hoffmann, and Frédéric Suter. Jedule: A Tool for Visualizing Schedules of Parallel Applications. In *Proceedings of the 1st International Workshop on Parallel Software Tools and Tool Infrastructures (PSTI)*, pages 169–178, San Diego, CA, September 2010.

[48] Frédéric Desprez and Frédéric Suter. A Bi-Criteria Algorithm for Scheduling Parallel Task Graphs on Clusters. In *Proceedings of the 10th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGrid)*, pages 243–252, Melbourne, Australia, May 2010. **(Core: A, acceptance rate: 23.3% [51/219])**.

[49] Henri Casanova, Frédéric Desprez, and Frédéric Suter. Minimizing Stretch and Makespan of Multiple Parallel Task Graphs via Malleable Allocations. In *Proceedings of the 39th International Conference on Parallel Processing (ICPP)*, pages 71–80, San Diego, CA, September 2010. **(Core: A, acceptance rate: 32% [72/225])**.

[50] Tchimou N'Takpé and Frédéric Suter. Concurrent Scheduling of Parallel Task Graphs on Multi-Clusters Using Constrained Resource Allocations. In *Proceedings of the 10th IEEE International Workshop on Parallel and Distributed Scientific and Engineering Computing (PDSEC)*, Rome, Italy, May 2009.

[51] Sascha Hunold, Thomas Rauber, and Frédéric Suter. Scheduling Dynamic Workflows onto Clusters of Clusters using Postponing. In *Proceedings of the 3rd International Workshop on Workflow Systems in e-Science (WSES)*, pages 669–674, Lyon, France, May 2008.

[52] Sascha Hunold, Thomas Rauber, and Frédéric Suter. Redistribution Aware Two-Step Scheduling for Mixed-Parallel Applications. In *Proceedings of the IEEE International Conference on Cluster Computing (Cluster)*, pages 50–58, Tsukuba, Japan, September 2008. **(Core: A, acceptance rate: 30.4% [28/92])**.

[53] Pierre-Nicolas Clauss, Jens Gustedt, and Frédéric Suter. Out-of-Core Wavefront Computations with Reduced Synchronization. In Julien Bourgeois, Fran cois Spies, and Didier El Baz, editors, *Proceedings of the 16th Euromicro International Conference on Parallel, Distributed and network-based Processing (PDP)*, pages 293–300, Toulouse, France, February 2008. IEEE. **(Core: C, acceptance rate: 40% [56/140])**.

[54] Frédéric Suter. Scheduling Δ-Critical Tasks in Mixed-Parallel Applications on a National Grid. In *Proceedings of the 8th IEEE/ACM International Conference on Grid Computing (Grid)*, pages 2–9, Austin, TX, September 2007. **(Core: A, acceptance rate: 21.9% [37/169])**.

[55] Tchimou N'takpé, Frédéric Suter, and Henri Casanova. A Comparison of Scheduling Approaches for Mixed-Parallel Applications on Heterogeneous Platforms. In *Proceedings of the 6th International Symposium on Parallel and Distributed Computing (ISPDC)*, Hagenberg, Austria, July 2007. IEEE Computer Press. **(Core: C, acceptance rate: 53.3% [48/80])**.

[56] Tchimou N'takpé and Frédéric Suter. Self-Constrained Resource Allocation for Parallel Task Graph Scheduling on Shared Computing Grids. In *Proceedings of the 19th IASTED International Conference on Parallel and Distributed Computing and Systems (PDCS)*, pages 36–41, Cambridge, MA, November 2007.

[57] Tchimou N'Takpé and Frédéric Suter. Critical path and area based scheduling of parallel task graphs on heterogeneous platforms. In *Proceedings of the 12th International Conference on Parallel and Distributed Systems (ICPADS)*, pages 3–10, Minneapolis, MN, July 2006. **(Core: B, acceptance rate: 38% [69/183])**.

[58] Eddy Caron, Frédéric Desprez, and Frédéric Suter. Out-of-Core and Pipeline Techniques for Wavefront Algorithms. In *Proceedings of the 19th International Parallel and Distributed Processing Symposium (IPDPS)*, Denver, CO, April 2005. **(Core: A, acceptance rate: 33.5% [115/343])**.

[59] Henri Casanova, Frédéric Desprez, and Frédéric Suter. From Heterogeneous Task Scheduling to Heterogeneous Mixed Parallel Scheduling. In Marco Danelutto, Domenico Laforenza, and Marco Vanneschi, editors, *Proceedings of the 10th International Euro-Par Conference (Euro-Par)*, volume 3149 of *Lecture Notes in Computer Science*, pages 230–237, Pisa, Italy, August 2004. Springer. **(Core: A, acceptance rate: 35.2% [124/352])**.

[60] Vincent Boudet, Frédéric Desprez, and Frédéric Suter. One-Step Algorithm for Mixed Data and Task Parallel Scheduling Without Data Replication. In *Proceedings of the 17th International Parallel and Distributed Processing Symposium (IPDPS'03)*, Nice, France, April 2003. **(Core: A, acceptance rate: 29.2% [119/407])**.

[61] Philippe Combes, Frédéric Lombard, Martin Quinson, and Frédéric Suter. A Scalable Approach to Network Enabled Servers. In A. Jean-Marie, editor, *Advances in Computing Science - ASIAN 2002. Internet Computing and Modeling, Grid Computing, Peer-to-Peer Computing, and Cluster Computing. Seventh Asian Computing Science Conference*, volume 2550 of *Lecture Notes in Computer Science*, pages 110–124, Hanoï, Vietnam, December 2002. Springer-Verlag. **(Core: B, acceptance rate: 56.6% [17/30])**.

[62] Eddy Caron and Frédéric Suter. Parallel Extension of a Dynamic Performance Forecasting Tool. In *Proceedings of the International Symposium on Parallel and Distributed Computing (ISPDC'02)*, pages 80–93, Iasi, Romania, July 2002. **(Core: C, acceptance rate: 28% [25/89])**.

[63] Eddy Caron, Frédéric Desprez, Frédéric Lombard, Jean-Marc Nicod, Martin Quinson, and Frédéric Suter. A Scalable Approach to Network Enabled Servers. In B. Monien and R. Feldmann, editors, *Proceedings of the 8th International EuroPar Conference (Research Note)*, volume 2400 of *Lecture Notes in Computer Science*, pages 907–910, Paderborn, Germany, August 2002. Springer-Verlag. **(Core: A, acceptance rate: 47% [125/265])**.

[64] Frédéric Desprez and Frédéric Suter. Mixed Parallel Implementations of the Top Level of Strassen and Winograd Matrix Multiplication Algorithms. In *Proceedings of the 15th International Parallel and Distributed Processing Symposium (IPDPS'01)*, San Francisco, April 2001. **(Core: A, acceptance rate: 36.2% [100/276])**.

[65] Frédéric Desprez, Martin Quinson, and Frédéric Suter. Dynamic Performance Forecasting for Network-Enabled Servers in a Heterogeneous Environment. In H.R. Arabnia, editor, *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA)*, volume III, pages 1421–1427, Las Vegas, June 2001. CSREA Press.

4.4 Misc. Publications and White Papers

[1] Eddy Caron, Frédéric Desprez, Eric Fleury, Frédéric Lombard, Jean-Marc Nicod, Martin Quinson, and Frédéric Suter. *Calcul réparti à grande échelle*, chapter Une approche hiérarchique des serveurs de calculs. Hermès Science Paris, 2002.

[2] Rafael Ferreira da Silva, Deborah Bard, Kyle Chard, Shaun DeWitt, Ian T. Foster, Tom Gibbs, Carole Goble, William Godoy, Johan Gustafsson, Utz-Uwe Haus, Stephen Hudson, Shantenu Jha, Laila Los, Drew Paine, Frederic Suter, Logan Ward, Sean Wilkinson, Marcos Amaris, Yadu Babuji, Jonathan Bader, Riccardo Balin, Daniel Balouek, Sarah Beecroft, Khalid Belhajjame, Rajat Bhattarai, Wes Brewer, Paul Brunk, Silvina Caino-Lores, Henri Casanova, Daniela Cassol, Jared Coleman, Taina Coleman, Iacopo Colonnelli, Anderson Andrei Da Silva, Daniel de Oliveira, Pascal Elahi, Nour Elfaramawy, Wael Elwasif, Brian Etz, Thomas Fahringer, Wesley Ferreira, Rosa Filgueira, Jacob Fosso Tande, Luiz Gadelha, Andy Gallo, Daniel Garijo, Yiannis Georgiou, Philipp Gritsch, Patricia Grubel, Amal Gueroudji, Quentin Guilloteau, Carlo Hamalainen, Rolando Hong Enriquez, Lauren Huet, Kevin Hunter Kesling, Paula Iborra, Shiva Jahangiri, Jan Janssen, Joe Jordan, Sehrish Kanwal, Liliane Kunstmann, Fabian Lehmann, Ulf Leser, Chen Li, Peini Liu, Jakob Luettgau, Richard Lupat, Jose M. Fernandez, Ketan Maheshwari, Tanu Malik, Jack Marquez, Motohiko Matsuda, Doriana Medic, Somayeh Mohammadi, Alberto Mulone, John-Luke Navarro, Kin Wai Ng, Klaus Noelp, Bruno P. Kinoshita, Ryan Prout, Michael R. Crusoe, Sashko Ristov, Stefan Robila, Daniel Rosendo, Billy Rowell, Jedrzej Rybicki, Hector Sanchez, Nishant Saurabh, Sumit Kumar Saurav, Tom Scogland, Dinindu Senanayake, Woong Shin, Raul Sirvent, Tyler Skluzacek, Barry Sly-Delgado, Stian Soiland-Reyes, Abel Souza, Renan Souza, Domenico Talia, Nathan Tallent, Lauritz Thamsen, Mikhail Titov, Ben Tovar, Karan Vahi, Eric Vardar-Irrgang, Edite Vartina, Yuandou Wang, Merridee Wouters, Qi Yu, Ziad Al Bkhetan, and Mahnoor Zulfiqar. Workflows Community Summit 2024: Future Trends and Challenges in Scientific Workflows. Technical Report ORNL/TM-2024/3573, Oak Ridge National Laboratory, 2024.

[3] Rafael Ferreira Da Silva, Rosa M. Badia, Venkat Bala, Debbie Bard, Peer-Timo Bremer, Ian Buckley, Silvina Caino-Lores, Kyle Chard, Carole Goble, Shantenu Jha, Daniel S. Katz, Daniel Laney, Manish Parashar, Frederic Suter, Nick Tyler, Thomas Uram, Ilkay Altintas, Stefan Andersson, William Arndt, Juan Aznar, Jonathan Bader, Bartosz Balis, Chris Blanton, Kelly Rosa Braghetto, Aharon Brodutch, Paul Brunk, Henri Casanova, Alba Cervera Lierta, Justin Chigu, Taina Coleman, Nick Collier, Iacopo Colonnelli, Frederik Coppens, Michael Crusoe, Will Cunningham, Bruno De Paula Kinoshita, Paolo Di Tommaso, Charles Doutriaux, Matthew Downton, Wael Elwasif, Bjoern Enders, Chris Erdmann, Thomas Fahringer, Ludmilla Figueiredo, Rosa Filgueira, Martin Foltin, Anne Fouilloux, Luiz Gadelha, Andy Gallo, Artur Garcia Saez, Daniel Garijo, Roman Gerlach, Ryan Grant, Samuel Grayson, Patricia Grubel, Johan Gustafsson, Valerie Hayot-Sasson, Oscar Hernandez, Marcus Hilbrich, AnnMary Justine, Ian Laflotte, Fabian Lehmann, Andre Luckow, Jakob Luettgau, Ketan Maheshwari, Motohiko Matsuda, Doriana Medic, Pete Mendygral, Marek Michalewicz, Jorji Nonaka, Maciej Pawlik, Loic Pottier, Line Pouchard, Mathias Putz, Santosh Kumar Radha, Lavanya Ramakrishnan, Sashko Ristov, Paul Romano, Daniel Rosendo, Martin Ruefenacht, Katarzyna Rycerz, Nishant Saurabh, Volodymyr Savchenko, Martin Schulz, Christine Simpson, Raul Sirvent, Tyler Skluzacek, Stian Soiland-Reyes, Renan Souza, Sreenivas Rangan Sukumar, Ziheng Sun, Alan Sussman, Douglas Thain, Mikhail Titov, Benjamin Tovar, Aalap Tripathy, Matteo Turilli, Bartosz Tuznik, Hubertus Van Dam, Aurelio Vivas, Logan Ward, Patrick Widener, Sean Wilkinson,

Justyna Zawalska, and Mahnoor Zulfiqar. Workflows Community Summit 2022: A Roadmap Revolution. [Online] https://zenodo.org/record/7750670, 2023.

[4] Rafael Ferreira da Silva, Henri Casanova, Kyle Chard, Tainã Coleman, Dan Laney, Dong H. Ahn, Shantenu Jha, Dorran Howell, Stian Soiland-Reyes, Ilkay Altintas, Douglas Thain, Rosa Filgueira, Yadu N. Babuji, Rosa M. Badia, Bartosz Balis, Silvina Caíno-Lores, Scott Callaghan, Frederik Coppens, Michael R. Crusoe, Kaushik De, Frank Di Natale, Tu Mai Anh Do, Bjoern Enders, Thomas Fahringer, Anne Fouilloux, Grigori Fursin, Alban Gaignard, Alex Ganose, Daniel Garijo, Sandra Gesing, Carole A. Goble, Adil Hasan, Sebastiaan Huber, Daniel S. Katz, Ulf Leser, Douglas Lowe, Bertram Ludäscher, Ketan Maheshwari, Maciej Malawski, Rajiv Mayani, Kshitij Mehta, André Merzky, Todd S. Munson, Jonathan Ozik, Loïc Pottier, Sashko Ristov, Mehdi Roozmeh, Renan Souza, Frédéric Suter, Benjamín Tovar, Matteo Turilli, Karan Vahi, Alvaro Vidal-Torreira, Wendy R. Whitcup, Michael Wilde, Alan R. Williams, Matthew Wolf, and Justin M. Wozniak. Workflows Community Summit: Advancing the State-of-the-art of Scientific Workflows Management Systems Research and Development. [Online] https://arxiv.org/abs/2106.05177, Aug 2022.

[5] Tchimou N'Takpé and Frédéric Suter. Prise en compte de tâches non-prioritaires dans l'ordonnancement batch. In *Conférence d'informatique en Parallélisme, Architecture et Système (Compas 2016)*, July 2016.

[6] Frédéric Desprez, George S. Markomanolis, and Frédéric Suter. Evaluation of Profiling Tools for the Acquisition of Time-Independent Traces. Technical Report RT-0437, Inria, July 2013.

[7] George S. Markomanolis and Frédéric Suter. Time-Independent Trace Acquisition Framework – A Grid'5000 How-to. Technical Report RT-0407, Inria, April 2011.

[8] Marc-Eduard Frincu, Martin Quinson, and Frédéric Suter. Handling Very Large Platforms with the New SimGrid Platform Description Formalism. Technical Report RT-0348, Institut National de Recherche en Informatique et en Automatique (INRIA), February 2008.

[9] Frédéric Suter and Henri Casanova. Extracting Synthetic Multi-Cluster Platform Configurations from Grid'5000 for Driving Simulation Experiments. Technical Report RT-0341, Institut National de Recherche en Informatique et en Automatique (INRIA), August 2007.

[10] Vincent Boudet and Frédéric Suter. Algorithme d'ordonnancement mixte à étape unique sans réplication de données. In *Quinzièmes Rencontres Francophones du Parallélisme*, La Colle sur Loup, October 2003.

[11] Eddy Caron and Frédéric Suter. Extension parallèle d'un outil de prédiction dynamique de performances. In *Quatorzièmes Rencontres Francophones du Parallélisme*, pages 69–74, Hammamet, Tunisie, April 2002.

[12] Frédéric Lombard, Martin Quinson, and Frédéri c Suter. Une approche extensible des serveurs de calcul. In *Treizièmes Rencontres Francophones du Parallélisme des Architectures et des Systèmes*, pages 79–84, Paris, La Villette, April 2001.

[13] Frédéric Desprez and Frédéric Suter. Produit de matrices, Strassen et parallélisme mixte. In *Treizièmes Rencontres Francophones du Parallélisme des Arch itectures et des Systèmes*, pages 25–30, Paris, La Villette, April 2001.

[14] Frédéric Suter, Eddy Caron, and Dominique Lazure. Manipulation de données de grande taille dans scilab//. In *Douzièmes Rencontres Francophones du Parallélisme*, Besançon, June 2000.

5 INVITED PRESENTATIONS, TUTORIALS, and COLLOQUIA

- *Toward fully autonomous workflows: handling errors and failures and how AI can help*, Keynote address at the First Workshop on Workflows, Intelligent Scientific Data, and Optimization for Automated Management, San Diego, USA, 2025.
- *I/O Simulation: from resources to complex workloads*, Keynote address at the Fifth Workshop on Re-envisioning Extreme-Scale I/O for Emerging Hybrid HPC Workloads, Edinburgh, UK, 2025.
- *Eco-Driven AI-HPC: Workflows, data & modeling*, Invited talk at the Hawai'i Scientific Data Workshop, Maui, USA, 2025.
- *WfCommons - a framework for enabling scientific workflow research and development*, Tutorial at the IEEE 20th International Conference on e-Science (e-Science), Osaka, Japan, 2024.
- *Challenges and Requirements to Drive Workflows from the Data Plane*, 2024 CWL Conference, Amsterdam, Netherlands, 2024.
- *Challenges and Requirements to Drive Workflows from the Data Plane*, SIAM Conference on Parallel Processing for Scientific Computing, Driving Scientific Workflows from the Data Plane minisymposium, Baltimore, USA, 2024.
- *Driving Modern Workflows from the Data Plane*, Workflows Community: Modern Workflows for Continuum and Cross-Facility Computing Bird of a Feather session at SC'23, Denver, Co, 2023.
- *How to Express/Handle the Dynamic and Cyclic Nature of Modern Workflows*, Integrating HPC, AI, and Workflows for Scientific Data Analysis Dagstuhl seminar, Wadern, Germany, 2023.
- *Driving Response to Uncertainty in Job Duration and Loss of Work*, Driving HPC Operations With Holistic Monitoring and Operational Data Analytics Dagstuhl seminar, Wadern, Germany, 2023.
- *High performance data management and in situ workflows*, lightning talk at 2022 edition of the Workflows Community Summit, Online, 2022.
- *Performance Evaluation Through Simulation with SimGrid*, keynote of the 2nd Workshop on Performance EngineeRing, Modelling, Analysis, and VisualizatiOn STrategy (PERMAVOST), Minneapolis, MN, 2022.
- *An Introduction to SimGrid: Versatile Simulation of Distributed Systemsand Applications*, seminar of the CAP Reading Group at University of Illinois, IL, 2022.
- *The Many Faces of Simulation for HPC*, 2020 SIAM Conference on Parallel Processing for Scientific Applications, *The Many Faces of Simulation for HPC* Minisymposium, Seattle, WA, 2020.
- *Learning-based Approaches to Estimate Job Wait Time in HTC Datacenters*, HEPiX Fall Workshop, Strasbourg, France, 2020.
- *How Fair is my Fair-Sharing? Exposing Some Hidden Behavior Through Workload Analysis*, HEPiX Spring Workshop, San Diego, CA, 2019.
- *Reducing the Human-in-the-Loop Component of the Scheduling of Large HTC Workloads*, Information Science Institute, University of Southern California, Los Angeles, CA, 2018.
- *What tools to rank machines?* (in French) panelist at Rencontres scientifiques et techniques du calcul et des données (JCAD), Toulouse, France 2018.
- *Simulating MPI applications : the SMPI Approach*, 2018 SIAM Conference on Parallel Processing for Scientific Applications, *Modeling and Simulation of HPC Architectures and Applications* Minisymposium, Tokyo, Japan, 2018.

- *Modeling Distributed Platforms from Application Traces for Realistic File Transfer Simulation*, Information Science Institute, University of Southern California, Los Angeles, CA, 2016.
- *Simulation of HPC applications with SimGrid*, HiPEAC Computing System Week, Milano, Italy, 2015.
- *User Engagement in Cosmology*, SNFactory annual collaboration meeting, Berkeley, CA, 2015.
- *SimGrid, Versatile Simulation of Distributed Systems*, Information Science Institute, University of Southern California, Los Angeles, CA, 2015.
- *Computer Scientists simulate too . . .* , Journées Informatiques de l'IN2P3-IRFU, 2014.
- *Toward More Scalable Off-line Simulations of MPI applications*, Clusters, Clouds, and Data for Scientific Computing, 2014.
- *Dimensioning through Simulation with SimGrid*, CoreGRID/ERCIM Workshop on Grids, Clouds and P2P Computing, 2012.
- *Paving the Road for the Simulation of Exascale and Cloud Systems* , Clusters, Clouds, and Data for Scientific Computing, 2012.
- *On Cluster Resource Allocation for Multiple Parallel Task Graphs*, 3rd Aussois Scheduling Workshop , 2010.
- *From Grids to Clouds, new problems and new solutions*, panel animator, École Normale Supérieure de Lyon, 2010.

6 FUNDING AWARDS

- $40,000,000 / 14 months (SP), US Department of Energy, Office of | type: Invited talk Advanced Scientific Computing Research, 10/25 - 12/26

  ModCon *The Transformational AI Models Consortium*

- $12,500,000 / 2 years (SP), US Department of Energy, Offices of Basic Energy Research and Advanced Scientific Computing Research, 10/25 – 09/27

  OPAL *Orchestrated Platform for Autonomous Laboratories to Accelerate AI-Driven BioDesign*

- $8,750,000 / 5 years (Co-PI from 11/25), US Department of Energy, Office of Advanced Scientific Computing Research, 10/23 - 09/28

  SWARM / Scientific Workflow Applications on Resilient Metasystem/

- $10,000,000 / 5 years (SP), US Department of Energy, Office of Advanced Scientific Computing Research, 10/23 - 09/28

  REDWOOD *Resilient Federated Workflows in a Heterogeneous Computing Environment*

- $743,000 / 2 years (Co-PI), Laboratory Directed Research and Development Program - INTERSECT, 10/23 - 09/25

  – Multi-workflow Orchestration and Lightweight Integrated Data Analysis Across Facilities

- $687,600 / 2 years (PI), ORNL LDRD Strategic Hire, 07/22 – 06/24

  SWAT *Science to Workflow Acceleration Tool*

- 48,000€ / 3 years (PI), Pack Ambition International Région Rhône-Alpes Auvergne, 01/21 – 12/23

  VISE *Virtual laboratory for data-Intensive Sciences performance Evaluation*.

- 143,235€ / 28 months (co-PI), Horizon 2020 E-INFRA European Project, 02/17 – 04/19

  PRACE-5IP: PRACE 5th Implementation Phase Project

- 136,734€ / 28 months (co-PI), Horizon 2020 E-INFRA European Project, 02/15 – 04/17

  PRACE-4IP: PRACE 4th Implementation Phase Project

- 125,000€ / 30 months (co-PI), Horizon 2020 Center of Excellence European Project, 10/15 – 03/18

  POP: Performance Optimisation and Productivity

- 22,000€ / 3 years (PI), CNRS PICS, 01/16 – 12/18

  WRENCH: *Workflow Management System Simulation Workbench*.

- 249,057€ / 4 years (co-PI), Agence Nationale de la Recherche, 01/12 – 12/15

  SONGS: *Simulation of Next Generation Systems*.

- 19,000€ / 3 years (PI), CNRS PICS, 01/10 – 12/12

  DimSim: *Simulation Environment for Cluster and Grid Dimensionning*.

- 5,000€ / 18 months (PI), Projet Interface Institut des Grilles / ALADDIN, 06/10 – 12/11

  SimGlite: *When SimGrid Meets gLite*.

- 5,000€ / 18 months (PI), Projet Interface Institut des Grilles / ALADDIN, 06/10 – 12/11

  SimData: *Simulation of CERN's distributed data management system*.

- 72,558€ / 3 years (co-PI), Agence Nationale de la Recherche, 04/09 – 09/12

  SPADES: *Servicing Petascale Architectures and DistributEd Systems*.

- 76,741€ / 3 years (co-PI), Agence Nationale de la Recherche, 01/09 – 10/12

  USS-SimGrid: *Ultra Scalable Simulation with SimGrid*.

- 4 000€ / 1 year (PI), Explorateur Inria, 2007
- 38 000€ / 2 years (PI), ARC Inria, 01/05 – 12/06

  OTaPHe: *Parallel Tasks Scheduling on Heterogeneous Environments*.

7 ADVISING

Ph.D. Dissertation Advising and Co-Advising: Tchimou N'Takpé (2009), George Markomanolis (2014), Anchen Chai (2019).

M.S. Thesis Advising and Co-Advising: Yick Ching Wong (2024), Arthur Dimanche-Antony (2021), Luc Gombert (2020), Mohammad-Mehdi Bazm (2015), Anshul Gupta (2014), George Markomanolis (2009), Marc-Eduard Frincu (2008), Kamel Khelfaoui (2007), Pierre-Nicolas Clauss (2006), Tchimou N'Takpé (2005), Olivier Riffault (2002), Martin Quinson (2001).

Postdoctoral Researcher Advising: Adrien Gougeon (2022-2023), Valentin Honoré (2021-2022), Laurent Bobelin (2010).

Engineer Advising: Luc Gombert (2021), Bertrand Rigaud (2018), Martin Khannouz (2018), Pierre Veyre (2014).

8 TEACHING

- Université Clermont Auvergne (M2) : Reproducibility and notebooks (2019-2021)
- Université Claude Bernard, Lyon 1 (L3) : Concurrent programming (2018-2021)
- Université Claude Bernard, Lyon 1 (M2) : Computer Science for High School Teachers (2019)
- Université Henri Poincaré, Nancy 1 (M2): Grids and distributed computing (2007-2009)
- Université Henri Poincaré, Nancy 1 (M2): Introduction to Networks (2005-2008)
- Université Henri Poincaré, Nancy 1 (L3): algorithms and programming (2005)
- Université Henri Poincaré, Nancy 1 (L1): algorithms and programming (2006-2008)
- Université Joseph Fourier, Grenoble 1 (L2): algorithms and functional programming (2003)
- Université Joseph Fourier, Grenoble 1 (L2): XML/Java (2003)
- Université Claude Bernard, Lyon 1 (L2) : C/C++ and algorithms (1999-2002)

9 AWARDS / HONORS

- Distinguished paper at the 20th Workshop on Workflows in Support of Large-Scale Science, Nov 2025
- Best short paper award at the 16th International Workshop on Performance Modeling, Benchmarking and Simulation of High Performance Computer Systems, Nov. 2025.
- Best poster award at the 19th IEEE International Conference on e-science, Oct. 2023.
- Best paper candidate at the 19th IEEE International Conference on e-science, Oct. 2023.
- Best paper award at EduHPC: Workshop on Education for High-Performance Computing, Nov. 2018.
- Best workshop paper award at 24th International European Conference on Parallel and Distributed Computing (EuroPar), Aug. 2018.
- Prime d'Encadrement Doctoral et de Recherche (2006-2008 and 2011-2015).

10 PROFESSIONAL SERVICES

10.1 Community Services

- Member of the Board of Exa-DoST: Data-oriented Software and Tools for the Exascale project (2024 – present).
- Member of the hiring committee for a CNRS Junior Professor Chair (2023)
- Member of the steering committee of the Workflow Community Initiative (2022 – present)
- Member of the hiring committee for Inria Rhône Alpes junior researcher positions (2020)
- Scientific and Technical Information correspondent of the CC-IN2P3 (2021)
- Member of the direction committee of the CC-IN2P3 (2016 – 2022)
- Scientific coordinator of the e-biothon project (2015-2016)
- Chargé de mission à l'interface entre grilles de recherche et grilles de production (2011-2013)
- **Funding request evaluations:** Swiss National Science Foundation (2023), Fonds de la Recherche Scientifique (2014, 2020, 2021), Labex OCEVU (2016), Israel Science Fundation (2013), Agence Nationale de la Recherche (2009, 2011, 2013), Netherlands Organization for Scientific Research (2011), EcosSud (2011), Université Libre de Bruxelles (2005).
- **Ph.D. Defense committees:** J. Monniot (2024), A. Faure (2020), A. Honorat (2020), V. Honoré (2020), M. Mercier (2019), F. Mendonca (2017), V. Pinheiro (2014), J.-N. Quintin (2011), P.-N. Clauss (2009).

10.2 Conference Chairing

- **Co-organizer:** Bird of a Feather session on "Workflows Community: Bridging Intelligent Workflows with Quantum and HPC for Scientific Discovery" at SC'25.
- **Workshop Chair:** 54th International Conference on Parallel Processing, San Diego, CA, Sep. 2025.
- **Co-organizer:** Bird of a Feather session on "Workflows Community: Collaborative Pathways for Designing an Integrated Infrastructure for Research Excellence" at SC'24.
- **Co-organizer:** SIAM Conference on Parallel Processing for Scientific Computing, Driving Scientific Workflows from the Data Plane Minisymposium, Baltimore, MD, Mar. 2024.
- **Workshop Chair:** 19th IEEE International Conference on e-science, Limassol, Cyprus, Oct. 2023.
- **Algorithms Track Chair:** 52nd International Conference on Parallel Processing, Salt Lake City, UT, Aug. 2023.
- **General Chair:** Conférence francophone d'informatique en Parallélisme, Architecture et Système (COMPAS), Lyon, France, Jun. 2021.
- **Co-organizer:** SIAM Conference on Parallel Processing for Scientific Computing, *The Many Faces of Simulation for HPC* Minisymposium, Seattle, WA, Feb. 2020.
- **Track Chair:** Conférence francophone d'informatique en Parallélisme, Architecture et Système (COMPAS), Toulouse, France, Jun. 2018.
- **Co-organizer:** Bird of a Feather session on "Performance Analysis and Simulation of MPI Applications and Runtimes at Exascale" at SC'14.
- **Local Chair:** The 12th IEEE/ACM International Conference on Grid Computing (Grid'11), Lyon France, Sep. 2011.
- **Local Chair:** The International European Conference on Parallel and Distributed Computing (EuroPar'11), Bordeaux, France, Sep. 2011.

10.3 Journals

- Editor of the Future Generation Computer Systems journal (IF: 7.5)

10.4 Conference Program Committees

- 32nd IEEE International Conference on High Performance Computing, Data, and Analytics, Hyderabad, India, Dec. 2025.
- IEEE/ACM International Conference for High Performance Computing, Networking, Storage, and Analysis, Saint Louis, Missouri, Nov. 2025.
- 28th edition of the workshop on Job Scheduling Strategies for Parallel Processing, Milano, Italy, Jun. 2025.
- 25st IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing, Tromsø, Norway
- 19th Workflows in Support of Large-Scale Science Workshop, Atlanta, Georgia, Nov. 2024.
- IEEE/ACM International Conference for High Performance Computing, Networking, Storage, and Analysis, Atlanta, Georgia, Nov. 2024.
- IEEE International Symposium on Computer Architecture and High Performance Computing, Hilo, Hawaii, Aug. 2024.
- 53st International Conference on Parallel Processing, Gotland, Sweden, August 2024.
- 18th Workflows in Support of Large-Scale Science Workshop, Denver, Colorado, Nov. 2023.
- 35th IEEE International Symposium on Computer Architecture and High Performance Computing, Porto Alegre, Brazil, Oct. 2023.
- 19th IEEE International Conference on e-science, Limassol, Cyprus, Oct. 2023.
- 17th Workflows in Support of Large-Scale Science Workshop, Dallas, Texas, Nov. 2022.
- 51st International Conference on Parallel Processing, Bordeaux, France, August 2022.
- 36th IEEE International Parallel and Distributed Processing Symposium, Lyon, France, May 2022.
- 21st IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, Melbourne, Australia, May 2021.
- 16th Workflows in Support of Large-Scale Science Workshop, Saint Louis, Missouri, Nov. 2021.
- International Conference on Parallel Processing, Edmonton, Canada, Aug. 2020.
- IEEE 32nd International Symposium on Computer Architecture and High Performance Computing, Porto, Portugal, Sep. 2020.
- 15th Workflows in Support of Large-Scale Science Workshop, Atlanta, Georgia, Nov. 2020.
- 19th International Conference on Algorithms and Architectures for Parallel Processing, Melbourne, Australia, Dec. 2019.
- 14th Workflows in Support of Large-Scale Science Workshop, Denver, Colorado, Nov. 2019.
- 15th International Conference on eScience, San Diego, California, Sep. 2019.
- International Conference on Parallel Processing, Tokyo, Japan, Aug. 2019.
- Conférence francophone d'informatique en Parallélisme, Architecture et Système (COMPAS), Anglet, France, Jun. 2019.
- 19th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, Larnaca, Cyprus, May 2019.

- 18th International Conference on Algorithms and Architectures for Parallel Processing, Guangzhou, China, Nov. 2018.
- 14th International Conference on eScience, Amsterdam, Netherlands, Sep. 2018.
- 13th International Meeting High Performance Computing for Computational Science, Sao Pedro, Brazil, Sep. 2018.
- IEEE 30th International Symposium on Computer Architecture and High Performance Computing, Lyon, France, Sep. 2018.
- Conférence francophone d'informatique en Parallélisme, Architecture et Système (COMPAS), Toulouse, France, Jun. 2018.
- 17th International Conference on Algorithms and Architectures for Parallel Processing, Helsinki, Finland, Aug. 2017.
- 17th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, Madrid, Spain, May 2017.
- 23th European MPI Users' Group Meeting, Edinburgh, Scotland, Sep. 2016.
- 12th International Meeting on High Performance Computing for Computational Science, Porto, Portugal, Jun. 2016.
- Conférence francophone d'informatique en Parallélisme, Architecture et Système (COMPAS), Lorient, France, Jun. 2016.
- 22nd European MPI Users' Group Meeting, Bordeaux, France, Sep. 2015.
- 21st International European Conference on Parallel and Distributed Computing, Vienna, Austria, Aug. 2015.
- 7th IEEE International Conference on Cloud Computing Technology and Science, Vancouver, Canada, Dec. 2015.
- 3rd International Conference on Future Internet of Things and Cloud, Rome, Italy, Aug. 2015
- 20th International European Conference on Parallel and Distributed Computing, Porto, Portugal, Aug. 2014.
- 21st European MPI Users' Group Meeting, Kyoto, Japan, Sep. 2014.
- 27th IEEE International Parallel and Distributed Processing Symposium, Boston, Massachusetts, May 2013.
- 20th European MPI Users' Group Meeting, Madrid, Spain, Sep. 2013.
- International Conference on Cloud Computing and Services Science, Aachen, Germany, May 2013.
- Third International Workshop on MapReduce and its Applications, Delft, The Netherlands, Jun. 2012.
- International Conference on Cloud Computing and Services Science, Porto, Portugal, Apr. 2012.
- 10th International Meeting on High-Performance Computing for Computational Science, Kobe, Japan, Jul. 2012.
- Virtualization Technologies for Distributed Computing Workshop, Delft, The Netherlands, Jun. 2012.
- Second International Workshop on MapReduce and its Applications, San Jose, California, Jun. 2011.
- 12th IEEE/ACM International Conference on Grid Computing, Lyon France, Sep. 2011.
- International European Conference on Parallel and Distributed Computing, Bordeaux, France, Sep. 2011.
- 11th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing, Newport Beach, California, May 2011.
- International Conference on Cloud Computing and Services Science, Noordwijkerhout, The Netherlands, May 2011.
- Virtualization Technologies for Distributed Computing Workshop, San Jose, California, May 2011.

- First International Workshop on MapReduce and its Applications, Chicago, Illinois, Jun. 2010.
- International Conference on Cloud Computing and Services Science, Valencia, Spain, Oct. 2010.
- Virtualization Technologies for Distributed Computing Workshop, Chicago, Illinois, Jun. 2010.
- Workshop on Challenges of Large Applications in Distributed Environments, Munich, Germany, Jun. 2009.
- International Conference on Parallel Computing, Lyon, France, Sep. 2009
- 17th Heterogenity in Computing Workshop, Miami, Florida, Apr. 2008.
- 16th Heterogenity in Computing Workshop, Long Beach, California, Mar. 2007.