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High performance N-body simulation on computational grids

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List of Publications

Journal Papers

- S. Portegies Zwart; T. Ishiyama; D. Groen; K. Nitadori; J. Makino; C. de Laat; S. McMillan; K. Hiraki; S. Harfst and P. Grosso: Simulating the Universe on an intercontinental grid of supercomputers, *IEEE Computer*, vol. 43, no. 8, pp. 63-70. August 2010 (DOI: 10.1109/MC.2009.419).
- D. Groen; S. Harfst and S. Portegies Zwart: The Living Application: A Self-Organising System for Complex Grid Tasks, *International Journal of High Performance Computing Applications*, vol. 24, pp. 185-193. May 2010 (DOI: 10.1177/1094342009347891).
- S. Portegies Zwart; S. McMillan; S. Harfst; D. Groen; M. Fujii; B. O Nuallain; E. Glebbeek; D. Heggie; J. Lombardi; P. Hut; V. Angelou; S. Banerjee; H. Belkus; T. Fragos; J. Fregeau; E. Gaburov; R. Izzard; M. Juric; S. Justham; A. Sottoriva; P. Teuben; J. van Bever; O. Yaron; M. Zemp, A multiphysics and multiscale software environment for modeling astrophysical systems, *New Astronomy*, vol. 14, pp. 369-378. May 2009 (DOI: 10.1016/j.newast.2008.10.006).
- D. Groen; S. Portegies Zwart; S. McMillan and J. Makino: Distributed Nbody Simulation on the Grid Using Dedicated Hardware, *New Astronomy*, vol. 13, pp. 348-358. July 2008 (DOI: 10.1016/j.newast.2007.11.004).
- S. Portegies Zwart; S. McMillan; D. Groen; A. Gualandris; M. Sipior and W. Vermin: A parallel gravitational Nbody kernel, *New Astronomy*, vol. 13, pp. 285-295. July 2008 (DOI: 10.1016/j.newast.2007.11.002).
- D. Groen, S. Rieder, P. Grosso, C. de Laat and S. Portegies Zwart: A Light-Weight Communication Library for Distributed Computing, *Computational Sci-*

ence and Discovery, vol. 3, art. no. 015002, August 2010 (DOI: 10.1088/1749-4699/3/1/015002).

Journal Papers in Preparation

- D. Groen, S. Portegies Zwart, T. Ishiyama and J. Makino: High Performance Gravitational N -body simulations on a Planet-wide Distributed Supercomputer. *Submitted to Computational Science and Discovery.*

Peer-reviewed Conference Papers

- D. Groen, S. Rieder, P. Grosso, C. de Laat and S. Portegies Zwart: A platform independent communication library for distributed computing, In: *Procedia Computer Science*, Volume 1, Issue 1, May 2010, pp. 2693-2700, Proceedings of the International Conference on Computational Science ICCS 2010.
- P. Bar, C. Coti, D. Groen, T. Herault, V. Kravtsov, M. Swain and A. Schuster: Running Parallel Applications with Topology-Aware Grid Middleware, in Proceedings of the 2009 Fifth IEEE International Conference on e-Science, pp. 292-299, Oxford, United Kingdom, December 2009.
- D. Groen; S. Harfst and S. Portegies Zwart: On the Origin of Grid Species: The Living Application, *Computational Science - ICCS 2009: 9th International Conference*, Baton Rouge, LA, USA, Proceedings, Part I, in series *Lecture Notes in Computer Science*, vol. 5544, pp. 205-212. Springer, Berlin, Heidelberg, May 2009.
- D. Groen; S. Portegies Zwart; S. McMillan and J. Makino: Simulating N -Body Systems on the Grid Using Dedicated Hardware, in M.T. Bubak; G.D. van Albada; J.J. Dongarra and P.M.A. Sloot, editors, *Computational Science ICCS 2008: 8th International Conference*, Krakow, Poland, Proceedings, Part I, in series *Lecture Notes in Computer Science*, vol. 5101, pp. 86-95. Springer, Berlin, Heidelberg, June 2008.
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- J. Gomes; M. David; J. Martins; L. Bernardo; A. Garca; M. Hardt; H. Kornmayer; J. Marco; R. Marco; D. Rodriguez; I. Diaz; D. Cano; J. Salt; S. Gonzalez; J. Sanchez; F. Fassi; V. Lara; P. Nyczyk; P. Lason; A. Ozieblo; P. Wolniewicz; M. Bluj; K. Nawrocki; A. Padee; W. Wislicki; C. Fernandez; J. Fontan; Y. Cotronis; E. Floros; G. Tsouloupas; W. Xing; M.D. Dikaiakos; J. Astalos; B. Coghlan; E. Heymann; M. Senar; C. Kanellopoulos; A. Tirado Ramos and D. Groen: Experience with the International Testbed in the CrossGrid Project, in P.M.A. Sloot; A.G. Hoekstra; T. Priol; A. Reinefeld and M. Bubak, editors, Advances in Grid Computing EGC 2005, in series Lecture Notes in Computer Science, vol. 3470, pp. 98-110. Springer, Berlin, Heidelberg, February 14-16 2005.
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Book Chapters

- A. Tirado Ramos; D. Shamonin; R. Shulakov; D. Groen; A. Hoekstra; D. van Albada; E. Zudilova and P. Sloot: Interactive Problem Solving Environments on the Grid for Imagebased Computational Haemodynamics, in The CrossGrid Book, The European CrossGrid Consortium, 2005.

Other Publications

- A. Bossenbroek, A. Tirado Ramos, D. Groen, D. van Albada, On the use of Call Option Contracts on Grid Resources, in Cracow Grid Workshop, Cracow, Poland, October 2006.
- I. Shoshmina, I. Morozov, D. Groen, A. Evlampiev, D. Malashonok, A. Bogdanov: Experience of exploiting RiDGrid segment, in Distributed Computing and Gridtechnologies in Science and Education Conference, Dubna, Russia, June 26-30, 2006
- J. Gomes; M. David; J. Martins; L. Bernardo; A. Garcia; M. Hardt; H. Kornmayer; J. Marco; R. Marco; D. Rodriguez; I. Diaz; D. Cano; J. Salt; S. Gonzalez; J. Sanchez; F. Fassi; V. Lara; P. Nyczyk; P. Lason; A. Ozieblo; P. Wolniewicz;

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