Resume: Guillaume Latu

Strasbourg University
LSIIT, Pole Api, Bd. Seb. Brant
67400, Illkirch, France

Cellular: (+33/0) 6 31 97 08 30
Office(1): (+33/0) 3 90 24 02 46
Office(2): (+33/0) 3 90 24 45 36
Fax (+33/0) 3 3 90 24 45 47
e-mail: latu @ unistra.fr

web: http://icps.u-strasbg.fr/~latu
http://www-math.u-strasbg.fr/calvi

Personal information:
Born 1975, France. French citizen. Married, 1 child.
Languages: French, English.

Education:
Ph.D. in Compter Science, University of Bordeaux 1 (LaBRI) – ScAlApplix/INRIA project, France, December 2002.
Title: "Parallel algorithmic and high performance computing dedicated to a simulation of a host-macroparasite system".
D.E.A. (Postgraduate diploma) Computer Science Department, University of Bordeaux 1 (LaBRI), June 1998.
Engineer in Computer Science (M.Sc. equivalent) ENSEIRB Bordeaux, France, 1994 - 1998.

Employment:
2003 - today: Assistant Professor (permanent position), University of Strasbourg 1/LSIIT, France.
Member of the CALVI/INRIA project. Partial secondment (2006-2008) in the ScAlApplix/INRIA project.
2002 - 2003: Teaching assistant, Post-Doctoral Researcher.
ENSEIRB (Graduate Engineering School)/LaBRI, France. Member of the ScAlApplix/INRIA project.
2001 - 2002: Teaching Assistant, Junior Researcher (PhD Candidate). University of Bordeaux 1, France.
2000 - 2001: Military service as scientific fellow in the Center of Operational Research and Simulation of the Army (CROSAT), Military School, Paris. Project: Distributed simulation of terrestrial battles.
1998 - 2000 : Teaching Assistant, Junior Researcher (PhD Candidate). University of Bordeaux 1, France.

Research interests: Parallel algorithmics, Parallel simulation, Numerical schemes, Scientific computing.

Teaching and advising:
Graduate teaching
Courses: Parallel algorithms and applications, Operating System, Distributed Systems, MPI, Fortran, Grid computing, Advanced Algorithms.
Advising: Supervising 6 Master students for their research projects in Computer Science, Co-advising 3 Ph.D students, Supervising 2 engineers.
Undergraduate teaching
Courses: Imperative programming, Unix/Linux tools, Data structures and algorithms, Data base administration, Introduction to networks, Introduction to Java, Computer Architecture, Object-oriented programming.

Software:
Developed many prototype softwares (jointly with other researchers and students). Examples:
LOSS: Scalable Parallel simulator for plasma and beams physics using Semi-Lagrangian method (OpenMP+MPI).
SPIN: Parallel simulator for high energy physics using Particle In Cell method (MPI).
OBIWAN: Adaptive simulator for plasma and beams physics using Semi-Lagrangian method (OpenMP).
Parasite: Stochastic simulation of a marine host-parasite system using a hybrid OpenMP+MPI programming.
...
Contributions in several softwares, among which : GYSELA (software of CEA/France), Oïdium-Vineyard (INRA/France).

Supports:
Academic supports
ACI Bio-informatique (2001-2003), ACI Grid (2003-2004), ANR Masse de données (MASSIM project 2005-2008),
ARC Plasma Magn. (2006-2008), ANR CIS (HOUPIC project 2007-2010), ANR blanche (EGYPT project 2008-2011).
Industrial supports
CEA Cadarache (2006-today), CEA Bruyères-le-Châtel (2005-2007), TOTAL Pau (2008).

Peer-reviewed journal publications:
[J7] Crouseilles (N.), Latu (G.), Sonnendrücker (E.). A parallel Vlasov solver based on local cubic spline interpolation on patches. *Journal of Computational Physics*. In Press. *http*
[J6] Besse (N.), Latu (G.), Ghizzo (A.), Sonnendrücker (E.), Bertrand (P.). A wavelet-MRA-based adaptive semi-Lagrangian method for the relativistic Vlasov-Maxwell system. *Journal of Computational Physics*. 2008. Vol. 227, Num. 16, pp 7889–7916. *http*
[J5] Genaud (S.), Gancarski (P.), Latu (G.) , Blanschot (D.), Rattanapoka (C.), Vouriot (D.). Exploitation of a parallel clustering algorithm on commodity hardware with P2P-MPI. *Journal of Supercomputing*. 2008, Vol. 43, No. 1, Springer, pp 21–41. *http*

[J4] Crouseilles (N.), Latu (G.), Sonnendrücker (E.). Hermite spline interpolation on patches for parallely solving the Vlasov-Poisson equation. *Int. J. Appl. Math. Comput. Sci.*. 2007, Vol. 17, No. 3, pp 335–349. *http*
[J3] Langlais (M.), Latu (G.), Roman (J.) and Silan (P.). Performance analysis and qualitative results of an efficient parallel stochastic simulator for a marine host-parasite system. *Concurrency & Computation: Practice and Experience.* Vol. 15, Issue 11-12, sept. 2003, pp. 1133–1150. *http*
[J2] Silan (P.), Langlais (M.) and Latu (G.). Dynamique des populations de monogènes, ectoparasites de téléostéens : stratégies démographiques et implications mathématiques. *Ecologie*, vol. 30, 1999, pp. 247–260. *pdf*
[J1] Latu (G.). Solution parallèle pour un problème de dynamique de population. *Technique et Science Informatiques*, vol. 19, juin 2000, pp. 767–790. *pdf*

Peer-reviewed conference publications:

[C17] Grandgirard (V.), Sarazin (Y.), Garbet (X.), Dif-Praladier (G.), Ghendrih (P.), Crouseilles (N.), Latu (G.), Sonnendrücker (E.) and Besse (N.). Computing ITG turbulence with a full-f semi-Lagrangian code. *Proc. of the 2nd international conference of Vlasovia, Communications in Nonlinear Science and Numerical Simulation.* 2008, Elsevier. Vol. 13(1), pp 81–87. *http*
[C15,C16] Crouseilles (N.), Gutnic (M.), Latu (G.), Sonnendrücker (E.). Comparison of two Eulerian solvers for the four-dimensional Vlasov equation: Part I & II. *Workshop Vlasovia 2006 - Communications in Nonlinear Science and Numerical Simulation.* Feb. 2008, Volume 13, Issue 1, pp 88–99. *http1* *http2*
[C14] Grandgirard (V.), Sarazin (Y.), Angelino (P.), Alberto (B.), Crouseilles (N.), Darmet (G.), Dif-Praladier (G.), Garbet (X.), Ghendrih (P.), Jolliet (S.), Latu (G.), Villard (L.), Sonnendrücker (E.). Global full-f gyrokinetic simulations of plasma turbulence. *Plasma Phys. Control. Fusion.* 2007, Vol. 49, pp B173–B182. *http*
[C13] Garbet(X.), Sarazin (Y.), Grandgirard (V.), Dif-Pradalier (G.), Darmet (G.), Ghendrih (Ph.), Angelino (P.), Bertrand (P.), Besse (N.), Gravier (E.), Morel (P.), Sonnendrücker (E.), Crouseilles (N.), Dischler (J.-M.), Latu (G.), Violard (E.), Brunetti (M.), Brunner (S.), Lapillonne (X.), Tran (T.-M.), Villard (L.) and Boulet (M.). Beyond scale separation in gyrokinetic turbulence. *Nuclear Fusion.* 2007, Vol. 47, pp. 1206–1212. *http*
[C12] Latu (G.), Crouseilles (N.), Grandgirard (V.) and Sonnendrücker (E.). Gyrokinetic Semi-Lagrangian Parallel Simulation using a Hybrid OpenMP/MPI Programming. *Recent Advances in PVM and MPI.* 2007, Springer, LNCS 4757, pp 356–364. *http*
[C11] Gutnic (M.), Latu (G.) and Sonnendrücker (E.). Adaptive two-dimensional Vlasov simulations of heavy ion beams. Proceedings of HIF06. Nuclear instruments and Methods in Physics Research A. 2007, Elsevier, Vol. 577(1), pp 125–128. *http*
[C10] Crouseilles (N.), Latu (G.) and Sonnendrücker (E.). Hermite Spline Interpolation on Patches for a parallel implementation of beam focusing problems. Proceedings of HIF06. Nuclear instruments and Methods in Physics Research A. 2007, Elsevier, Vol. 577(1), pp 129–132. *http*
[C9] Tessier (G.), Latu (G.) and Roman (J.). Hybrid MPI-Thread Implementation on a Cluster of SMP Nodes of a Parallel Simulator for the Propagation of Powdery Mildew in a Vineyard. *High Performance Computing and Communications, Second International Conference, HPCC 2006.* 2006, Springer, LNCS 4208, pp 833–842. *http*
[C8] Grandgirard (V.), Sarazin (Y.), Garbet (X.), Dif-Pradalier (G.), Ghendrih (P.), Crouseilles (N.), Latu (G.), Sonnendrücker (E.), Besse (N.), Bertrand (P.). GYSELA, a full-f global gyrokinetic Semi-Lagrangian code for ITG turbulence simulations. *Proceedings of Theory of fusion plasmas, joint Varenna - Lausanne international workshop.* 2006. AIP Conference Proceedings, Volume 871, pp. 100–111. *http*
[C7] Sarazin (Y.), Grandgirard (V.), Dif-Pradalier (G.), Fleurence (E.), Garbet (X.), Ghendrih (Ph.), Bertrand (P.), Besse (N.), Crouseilles (N.), Sonnendrücker (E.), Latu (G.), Violard (E.). Impact of large scale flows on turbulent transport. *Plasma Phys. Control. Fusion.* 2006. Vol. 48, pp B179–B188. *http*
[C6] Gutnic (M.), Mehrenberger (M.), Sonnendrücker (E.), Hoenen (O.), Latu (G.), Violard (E.). Adaptive 2D Vlasov simulation of Particle Beams. *Proceedings of ICAP 2006.* 2006. *pdf*
[C5] Sonnendrücker (E.), Gutnic (M.), Haefele (M.), Latu (G.), Lemaire (J.-L.). Vlasov Simulations of Beams and Halo. *In : Proceedings of the 2005 Particle Accelerator Conference* . 2005, IEEE Catalog Number 05CH37623C. *http*
[C4] Calonnec (A.), Latu (G.), Naulin (JM.), Roman (J.), and Tesssier (G.). Parallel Simulation of the Propagation of Powdery Mildew in a Vineyard. *In : Europar'05 Parallel Processing.* 2005. Springer Verlag, LNCS 3648, pp 1254–1264. *http*
[C3] Gutnic (M.), Haefele (M.), Latu (G.). Parallel Vlasov solver using a Wavelet based Adaptive Mesh Refinement. *ICPP'2005, 7th Workshop on High Perf. Scientific and Engineering Computing.* 2005. IEEE Computer Society Press. pp 181–188. *http*
[C2] Langlais (M.), Latu (G.), Roman (J.) and Silan (P.). Stochastic simulation of a marine host-parasite system using a hybrid OpenMP/MPI programming. *In : Europar'02 Parallel Processing.* LNCS 2400 - Springer Verlag. pp 436–446. *http*
[C1] Langlais (M.), Latu (G.), Roman (J.) and Silan (P.). Parallel numerical simulation of a marine host-parasite system. *In : Europar'99 Parallel Processing*, ed. Amestoy (P.) & al. LNCS 1685 - Springer Verlag. pp 677–685. *http*

Book contributions:

[B1] Silan (P.), Caltran (H.) and Latu (G.). Ecologie et dynamique des populations de monogènes, ectoparasites de téléostéens marins : approche et contribution montpelliéraine. *Chapter of the book " Taxonomy, ecology and evolution of metazoan parasites " in honnor to Louis Euzet (Ed. C. Combes & J. Jourdane) Presses Univ. de Perpignan.* *pdf*