

Éric BUCHLIN

Born 16 August 1978, MULHOUSE, France

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Scientific interests

Physical processes in the solar corona and the heliosphere.
Statistical analysis of observations and numerical simulations data.
Magnetohydrodynamics, turbulence and intermittence.

Current position

CNRS Researcher (CR2) at Institut d'Astrophysique Spatiale (IAS), Orsay, France.

Employment history

- 2007–2008** Research assistant at IAS.
- 2006–2007** Research associate, Imperial College, London, UK, working with Peter Cargill.
- 2004–2006** Post-doctoral fellow of TOSTISP (*Theory, Observations and Simulations of Turbulence in Space Plasmas*), a Research and Training Network of the European Union (5th Framework Program for Research and Technology), working with Marco Velli at University of Florence, Italy.
- 2002–2004** Research and teaching grant (*allocation couplée* : PhD scholarship, with teaching duties), at University of Paris XI.
- 1998–2002** Full scholarship at the École normale supérieure (ENS), Paris.

Education

- 2001–2004** PhD thesis, under the supervision of Jean-Claude Vial (IAS, University of Paris XI) and Marco Velli (University of Florence, Italy), on the subject *Signatures and models of small-scale turbulent coronal heating*. I have done and analyzed observations and numerical simulations of turbulence in the solar corona, so as to understand how the corona can reach high temperatures.
- 2000–2001** DEA (advanced graduate class) *Astrophysics and Instrumentation*, University of Paris VI (rank : 1st).
- 1999–2000** Maîtrise (M.S.) Physics, University of Paris VI.
- 1998–1999** Licence (B.A.) Physics, University of Paris VI.
- 1998–2002** École normale supérieure (ENS), Paris.
- 1996–1998** Two-year preparation (mathematics, physics) for admission at the École normale supérieure (competitive exam).
- 1996** Baccalauréat, Sciences.

- Languages** French : mother tongue ; English : fluent ; German and Italian.
- Computer skills** Good programming experience in C, C++, Fortran 77–95, and Perl ; parallel computing (MPI) ; \LaTeX , XHTML+CSS. Data analysis and programming with IDL. Unix and Windows system administration.

Grants, awards and honors

- 2007–2008** Post-doctoral Fellowship from Centre National d'Études Spatiales.
- 2004–2006** European contract "Marie Curie" (5th Framework Program, Improving Human Potential).
- 2004** Young Scientist's Travel Award for Europeans (YSTA), to participate to the EGU assembly.
- 2002** Travel grant of the *Université Franco-Italienne* for completing PhD in both France and Italy.
- 1996** Ranks 3 and 7 in Physics and resp. Mathematics at *Concours général* (French national competitive exam for the best high school students)

Publications, meetings and workshops

See list enclosed with this CV, or at http://eric.buchlin.org/cv/pub_buchlin_fr.pdf.

Teaching and public outreach, organization duties

Referee for *Astrophys. J.*, *Nonlin. Proc. Geophys.*, and conferences.

- June–Jul. 2009** Advisor for the undergraduate internships of Jean Teyssandier (bottleneck effect in turbulence) and Adrien Revel (automated detection of solar filaments).
- Jan. 2008** Lecture on coronal heating, Master course on astrophysical plasmas, Orsay.
- Dec. 2008** Hands-on project for the course *Simulations numériques et calculs haute performance*, Astronomy doctoral school of Paris area.
- June–Jul. 2008** Advisor of Kevin Olivier’s undergraduate internship on turbulent MHD dynamo effect.
- June 2008** Lecture on solar corona and wind heating, CNRS school on *Processus physiques dans l’héliosphère et contraintes observationnelles*, Cargèse, France.
- 2006–2007** 3rd year physics laboratory, Imperial College, London : radiative transfer and turbulence in the atmosphere (65 hours over the year).
- Oct. 2005** Organization (logistics, web site) of the meeting and general assembly of Marie Curie Fellowship Association (1 day) in Pontedera (Pisa), Italy.
- June 2004** Public outreach coordination for IAS during the Venus Transit.
- May 2004** Organization and teaching of a \LaTeX class for IAS researchers.
- 2002–2004** 128 hours at second-year university level : experimental physics, written exams, preparation for students’ oral exams.
- 2001–2004** Elected representant of graduate students at the Laboratory Council of IAS.
- 2001–2004** Involvement in observation campaigns at MEDOC (IAS) : planner for the SUMER and CDS instruments onboard SoHO.
- 2001** Scientific aid for primary school teachers (*La Main à la Pâte*) with 30 hours of experimental physics in class.
- 2000–2002** Private lessons (high school level).
- 1999–2002** President of the club of amateur astronomy of the École normale supérieure.

Research programs and internships

- 2007–2009** Member of the team “The role of spectroscopic and imaging data in understanding coronal heating” (PI : Susanna Parenti) of the International Space Science Institute (ISSI), Bern, Switzerland.
- 2005** Long-term participant in the program *Grand Challenge Problems in Computational Astrophysics*, Institute for Pure and Applied Mathematics, University of California, Los Angeles. Workshops on : *Astrophysical Fluid Dynamics*, *N-Body Problems*, *Relativistic Astrophysics*, *Transfer Phenomena*.
- 2001** *Statistical Properties of Solar Events Simulated by a Cellular Automaton*. Advisors : Sébastien Galtier and Jean-Claude Vial, IAS, Orsay. Numerical code, optimization, statistical analysis.
- 2000** *Recent Observations of an Equatorial Coronal Hole*. Advisor : Dr. Donald M. Hassler, Southwest Research Institute, Boulder, Colorado. Data calibration, reduction and analysis for a SOHO/SUMER observation campaign.
- 1999** (1 month) *Construction and Optimization of a Cylindrical Laser Beam to form Annular Optical Lattices*. Advisor : Philippe Verkerk, University of Lille, France.

Other qualifications

Running (up to marathon : Los Angeles 2005).