

THIBAUT DIVOUX

Born August 5th, 1981 in Mulhouse, France

Tenured CNRS Researcher

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CURRENT SITUATION

- ▷ **Massachusetts Institute of Technology** (Cambridge, USA) [since Jan. 2014]
 - Currently visiting scholar at G.H. McKinley's Lab
- ▷ **Centre de Recherche Paul Pascal** (Pessac, France) [since Jan. 2013]
 - Tenured CNRS researcher - CR2 (section 05)

PROFESSIONAL EMPLOYMENT

- ▷ **École Normale Supérieure de Lyon** (Lyon, France) [Sept.–Dec. 2012]
 - ERC Postdoctoral fellow “USOFT” project
adviser: Prof. Sébastien MANNEVILLE.
- ▷ **École Normale Supérieure de Lyon** (Lyon, France) [2009–Aug. 2012]
 - Postdoctoral fellow (“Agrégé préparateur”)
adviser: Prof. Sébastien MANNEVILLE.

EDUCATION & TRAINING

- ▷ **Emory University** (Atlanta, GA - USA) [Oct. 2011–March 2012]
 - Visiting Postdoc - main funding: ENS Lyon; co-funding: E.R. Weeks
“Formation of protein monolayers investigated by passive and active microrheology”
adviser: Prof. Eric R. WEEKS.
- ▷ **École Normale Supérieure de Lyon** (Lyon, France) [2006–2009]
 - Ph.D. in Physics defended on June 2009
Title: *Noise and fluctuations in creeping flows of complex fluids*
adviser: Dr. Jean-Christophe GÉMINARD.
 - September 2007: 1 month training at the “Grupo de Medios Porosos”, FIUBA, Buenos Aires
adviser: Dr. Maria Alejandra AGUIRRE.
- ▷ **École Normale Supérieure de Cachan** (Cachan, France) [2005–2006]
 - June 2006, Agrégé: “Agrégation de Physique-Chimie”, national competitive exam (ranked 31/1785).
 - June 2005, Normalien: competitive exam to join the ENS Cachan (2 years scholarship).
- ▷ **École Normale Supérieure** (Paris, France) [2002–2005]
 - B.Sc. and M.Sc. (Hons) – “Magistère Interuniversitaire de Physique”.
 - 2004: 7 months training at the “Laboratorio de física no lineal”, USACH, Santiago de Chile
advisers: Prof. Francisco MELO & Dr. Jean-Christophe GÉMINARD.
 - 2003: 2 months training at the LPS, École Normale Supérieure, Paris
advisers: Prof. Daniel BONN and Dr. Yacine AMAROUCÈNE.

- ▷ **Lycée Kléber** (Strasbourg, France) [1999–2002]
 · “Classe préparatoire PCSI/PC*”, bachelor equivalent program.

TEACHING

- ▷ **Lecturer (“Agrégé Préparateur”)** (ENS Lyon) [140h/year] [2009–2012]
 ▷ **Teaching Assistant** (ENS Lyon) [64h/year] [2007–2009]
 I assisted graduate students in preparing the “Agrégation”, a French national highly competitive exam that allow the successful applicants to obtain a position as undergraduate teachers. The training consists in preparing during a full year a selection of about 150 topics in physics and chemistry (undergraduate level). The applicants pass written exams in Physics and Chemistry before being asked to give two lectures of 50 min each and to present a consistent set of experiments during 45 min for the final exam which spans over 3 days. I wrote several contributions (in French) available on my website as well as a prep-book of about 250 pages that include exercices, advice, etc.
- ▷ **Tutorial for undergraduates (Classe Préparatoire)** [~80h/year] [2004–2011]
 · Lycée du Parc, lycée de La Martinière Monplaisir, lycée Jean Perrin, centre scolaire “aux Lazaristes” (Lyon) & Institut Bossuet (Paris). Level: MPSI, PCSI, MP/MP*, PC/PC*, PSI & BCPST.

SERVICE AND LEADERSHIP

- ▷ **Referee for *Journal of Rheology* (7) since 2011, *Physical Review Letters* (7), *Physical Review E* (5), *The European Physical Journal E* (1), *Journal of Geophysical Research - Solid Earth* (1), *Chemical Engineering and Processing* (1) & *The Czech Science Foundation* (1) since 2012, *Mechanics of Time-Dependent Materials* (1), *Journal of Non-Newtonian Fluid Mechanics* (1) & *Rheologica Acta* (2) since 2014.**
- ▷ **Seminar, Symposium & Conference Organization**
 Co-organizer, Workshop on modelling wall slip in flows of complex fluids, ENS Lyon, France [Sept. 2014]
- ▷ **Member of the admission expert panel** (Physics) for the X-ENS-ESPCI exam (PC) [since 2012]
 ▷ **Member of the admission expert panel** (Physics) for the “TIPE” oral exam (PC) [2010-2014]
- ▷ **Elected Ph.D. student representative**, ED 52 PHAST [2008-2009]
 · Co-organizer with E. Massot of the 1st & 2nd corporates/PhD-student meeting [March 2008/2009]
 · Co-organizer with L. Jaubert of the annual PhD students Seminar at ENS Lyon [June 2008]

GRANTS – AWARDS

- ▷ **PEPS IdEx Bordeaux – CNRS** (23.6 k€) with V. Ravaine & H. Bodiguel [2015]
 ▷ **PICS USA – CNRS** (12 k€) with G.H. McKinley & S. Manneville [2015]
 ▷ **France-MIT seed fund** (22 k\$) with G.H. McKinley & S. Manneville [2015]
 ▷ **R&D BioMérieux** (168 k€) with P. Snabre [2014]
 · This grant comes as a complement to the 3-years CIFRE PhD. scholarship of B. Mao
- ▷ **Beam time allocated @ID02-ESRF** [2014]
 · Proposal SC-3929 *Local scenario for the primary creep regime in colloidal gels*
- ▷ **PEPS - CNRS “Physique théorique et ses Interfaces”** (5 k€) [2014]
 · Fund to organize a workshop on *modelling wall slip in flows of complex fluids*
- ▷ **Distinguished EPJ referee** [2013]
 ▷ **CNRS-INP “Excellence Bonus”** (3.5 k€/year for 4 years) [2013]
 ▷ **France-Berkeley Fund** (9 k\$) with S.J. Muller [2013]
 ▷ **R&D BioMérieux** (54 k€) with P. Snabre & S. Manneville [2013]
 ▷ **Grant FP7-PEOPLE-2011-IOF**, Marie Curie Actions (225 k€) [2011]
 · Project #299281, declined for a CNRS position

- ▷ **Excellence Award program**, (4 k€) Master's Degree, University of Paris VI – ENS Paris [2005]
- ▷ **Mobility Grant**, *Conseil Régional d'Alsace, France* (1.5 k€) [2004]
 - 7 months internship in the group of F. Melo (USACH), Chile.

PEER REVIEWED PUBLICATIONS: [25]

- [25] **Shear Banding of Complex Fluids**,
T. Divoux M.-A. Fardin, S. Manneville & S. Lerouge,
Annual Review of Fluid Mechanics **48**, 81–103 [2016]
- [24] **Wall slip across the jamming transition of soft thermoresponsive particles**,
T. Divoux, V. Lapeyre, V. Ravaine & S. Manneville,
Physical Review E Rapid Com. **92**, 060301(R) [2015]
- [23] **Avalanche-like fluidization of a non-Brownian particle gel**,
 A. Kurokawa, V. Vidal, K. Kurita, T. Divoux & S. Manneville,
Soft Matter Advanced article: DOI: 10.1039/C5SM01259G [2015]
- [22] **Syneresis and delayed detachment in agar plates**,
T. Divoux, B. Mao & P. Snabre,
Soft Matter **11**, 3677-3685 [2015]
- [21] **Creep and Fracture of a Protein Gel under Stress**,
 M. Leocmach, C. Perge, T. Divoux & S. Manneville,
Physical Review Letters **113**, 038303 [2014]
 - ♠ Highlight article by Philip Ball in *Nature Materials* **13**, 850 (Sept. 2014) “News and Views” section
 - ♠ Highlighted in the INP “Scientific news” section
 - ♠ Publicised in the ENS Lyon “zoom sur...” column
- [20] **Timescales in creep and yielding of attractive gels**,
 V. Grenard, T. Divoux, N. Taberlet & S. Manneville,
Soft Matter **10**, 1555-1571 [2014]
- [19] **Insights on the local dynamics induced by thermal cycling in granular matter**,
 B. Percier, T. Divoux & N. Taberlet,
Europhysics letters **104**, 24001 [2013]
- [18] **Rheological Hysteresis in Soft Glassy Materials**,
T. Divoux, V. Grenard & S. Manneville,
Physical Review Letters **110**, 018304 [2013]
- [17] **Turbulent flows in highly elastic wormlike micelles**,
 J. Beaumont, N. Louvet, T. Divoux, M.A. Fardin, H. Bodiguel, S. Lerouge, S. Manneville & A. Colin,
Soft Matter **9**, 735–749 [2013]
 - ♠ Highlighted as “hot article” in RCS publishing’s blog
- [16] **Interplay between elastic instabilities and shear-banding:
 Three categories of Taylor-Couette flows and beyond**,
 M.A. Fardin, T.J. Ober, V. Grenard, T. Divoux, S. Manneville, G.H. McKinley & S. Lerouge,
Soft Matter **8**, 10072–10089 [2012]
- [15] **Yielding dynamics of a Herschel-Bulkley fluid: a critical-like fluidization behaviour**,
T. Divoux, D. Tamarii, C. Barentin, S. Teitel & S. Manneville,
Soft Matter **8**, 4151–4164 [2012]
- [14] **Shear-banding in surfactant wormlike micelles: Elastic instabilities & wall slip**,
 M.A. Fardin, T. Divoux, M.A. Guedeau-Boudeville, I. Buchet-Maulien, J. Browaeys,
 G.H. McKinley, S. Manneville & S. Lerouge,
Soft Matter **8**, 2535–2553 [2012]

- [13] **Degassing cascades in a shear-thinning viscoelastic fluid**,
V. Vidal, F. Soubiran, [T. Divoux](#), & J.-C. Géminard,
Physical Review E **84**, 066302 [2011]
- [12] **Stress overshoot in a simple yield stress fluid: an extensive study combining rheology and velocimetry**,
[T. Divoux](#), C. Barentin & S. Manneville,
Soft Matter **7**, 9335–9349 [2011]
- [11] **From stress-induced fluidization processes to Herschel-Bulkley behaviour in simple yield stress fluids**,
[T. Divoux](#), C. Barentin & S. Manneville,
Soft Matter **7**, 8409–8418 [2011]
♠ **Highlighted as “hot article” in RCS publishing’s blog**
- [10] **Influence of non-Newtonian rheology on magma degassing**,
[T. Divoux](#), V. Vidal, M. Ripepe & J.-C. Géminard,
Geophysical Research Letters **38**, L12301 [2011]
- [9] **Invited Review: Effect of Temperature on a Granular Pile**,
[T. Divoux](#),
Papers in Physics **2**, 020006 [2010]
♠ **Discussed by Mark Buchanan in his Nature Physics monthly column (April 2012)**
- [8] **Dynamics of soap bubble bursting and its implications to volcano acoustics**,
V. Vidal, M. Ripepe, [T. Divoux](#), D. Legrand, J.-C. Géminard & F. Melo,
Geophysical Research Letters **37**, L07302 [2010]
- [7] **Transient Shear Banding in a Simple Yield Stress Fluid**,
[T. Divoux](#), D. Tamarii, C. Barentin & S. Manneville,
Physical Review Letters **104**, 208301 [2010]
♠ **PRL Editors’ Suggestion**
♠ **Highlight article by Johanna Miller in *Physics Today* (July 2010)**
- [6] **Intermittent outgassing through a non-newtonian fluid**,
[T. Divoux](#), E. Bertin, V. Vidal & J.-C. Géminard,
Physical Review E **79**, 056204 [2009]
- [5] **Acoustic emission associated with the bursting of a gas bubble at the free surface of a non-newtonian fluid**,
[T. Divoux](#), V. Vidal, F. Melo & J.-C. Géminard,
Physical Review E **77**, 056310 [2008]
- [4] **Creep motion of a granular pile induced by thermal cycling**,
[T. Divoux](#), H. Gayvallet & J.-C. Géminard,
Physical Review Letters **101**, 148303 [2008]
- [3] **Friction and dilatancy in immersed granular matter**,
[T. Divoux](#) & J.-C. Géminard,
Physical Review Letters **99**, 258301 [2007]
- [2] **Acoustic signal associated to the bursting of a soap film which initially closes an overpressurized cavity - Experiment and theory**,
V. Vidal, J.-C. Géminard, [T. Divoux](#) & F. Melo,
European Physical Journal B **54**, 321–339 [2006]
- [1] **Turbulent drag reduction by surfactants**,
J. Drappier, [T. Divoux](#), Y. Amarouchène, F. Bertrand, S. Rodts, O. Cadot, J. Meunier & D. Bonn,
Europhysics Letters **74** (2), 362–368 [2006]

PEER REVIEWED PROCEEDINGS: [5]

- [P5] **Fluides complexes sous cisaillement: quelques instabilités à nombre de Reynolds nul**,
C. Perge, M.-A. Fardin, T. Divoux, N. Taberlet, & S. Manneville,
Comptes-rendus du 21^{ème} Congrès Français de Mécanique, Bordeaux [2013]
- [P4] **Fluides complexes sous cisaillement: quelques instabilités à nombre de Reynolds nul**,
C. Perge, V. Grenard, M.-A. Fardin, T. Divoux, N. Taberlet, & S. Manneville,
Comptes-rendus de la 16^{ème} Rencontre du Non-Linéaire, Paris [2013]
- [P3] **Ageing of a granular pile induced by thermal cycling**,
T. Divoux, I. Vassilief, H. Gayvallet, & J.-C. Géminard,
Powders and Grains 2009, AIP Conference Proceedings, 1145, 473–476 [2009]
- [P2] **Arches size distribution in a bidimensional pile of disks**,
M. A. Aguirre, L. A. Pugnaloni, T. Divoux & J.G. Grande,
Powders and Grains 2009, AIP Conference Proceedings, 1145, 227–230 [2009]
- [P1] **Dégazage intermittent à travers une colonne de fluide complexe**,
T. Divoux, V. Vidal, F. Melo & J.-C. Géminard,
Comptes rendus des 11^{ème} Rencontre du Non-Linéaire, Paris (ISBN 2-9516773-7-5) [2008]

MANUSCRIPTS UNDER REVIEW : [3]

- [S3] **Normal force controlled rheology for thermoreversible gels**,
B. Mao, T. Divoux & P. Snabre,
Submitted to *Journal of Rheology* (August 2015)
- [S2] **Structure of graphene oxide under flow**,
P. Poulin, R. Jalili, W. Néri, F. Nallet, T. Divoux, S.H. Aboutaleb, A. Colin, G. Wallace & C. Zakri,
Submitted to *Journal of the American Chemical Society* (April 2015)
- [S1] **Yield Stress Materials in Soft Condensed Matter**,
D. Bonn, M.M. Denn, J. Paredes, L. Berthier, T. Divoux & S. Manneville,
Submitted to *Reviews of Modern Physics*, (February 2015)

PRESENTATIONS: [62]

- ▷ **Oral Communications in international conferences [14]**
- 2015/11/22-24 68th Annual APS DFD Meeting, Boston (MA), **USA**.
 - 2015/10/11-15 87th Annual SOR Meeting, Baltimore (MD), **USA**.
 - 2015/04/14-17 10th Annual European Rheology Conference, Nantes, **France**.
 - 2014/07/20-25 6th Pacific Rim conference on Rheology, Melbourne, Victoria, **Australia**.
 - 2014/05/27-30 9th Mechanics of time-dependent materials, Montréal, Québec, **Canada**.
 - 2013/10/13-17 85th Annual SOR Meeting, Montréal, Québec, **Canada**.
 - 2013/02/17-22 Materials' Deformation - second edition, Les Houches, **France**.
 - 2012/11/18-20 65th Annual APS DFD Meeting, San Diego (CA), **USA**.
 - 2012/02/31 APS March Meeting 2012, Boston (MA), **USA**.
 - 2011/05/10-14 7th Annual European Rheology Conference, Suzdal, **Russia**.
 - 2011/01/31 2nd Workshop on Fluctuations in Material Properties, Courmayeur, **Italy**.
 - 2010/04/07-09 6th Annual European Rheology Conference, Göteborg, **Sweden**.
 - 2009/07/13-17 Powders & Grains, Colorado School of Mines, Golden (CO) **USA**.
 - 2008/08/17-22 IAVCEI, General Assembly: "Understanding Volcanoes", Reykjavik, **Iceland**.

▷ **Posters in international conferences [8]**

- 2011/09/06-10 8th Liquid Matter Conference, Vienna, **Austria**.
- 2011/03/30-04/02 Workshop on dynamics in viscous liquids III, Roma, **Italy**.
- 2010/09/27-10/09 SFB TR6 Summer School on Soft Matter, Cargèse, Corsica, **France**.
- 2010/08/02-13 Workshop Dynasoft 2010, Cargèse, Corsica, **France**.
- 2010/07/05-08 2nd International Soft Matter Conference, Granada, **Spain**.
- 2007/10/07-10 4th Franco-Israeli Binational Conference, Biarritz, **France**.
- 2007/09/24-28 92nd Reunión Nacional de Física, Salta, **Argentina**.
- 2004/04/26-29 Frontiers in Material Research, Viña del Mar, **Chile**.

▷ **Invited Seminars [32]**

When?	By whom?	Where?
· 2016/01/29	D. Truzzolillo	Laboratoire Charles Coulomb, Montpellier, France .
· 2015/11/13	R.H. Ewoldt	University of Illinois at Urbana-Champaign, Urbana (IL), USA .
· 2015/08/21	S.H. Yun	Wellman Center for Photomedicine, MGH - Boston (MA), USA .
· 2015/06/24	E. Del Gado	Georgetwon University, Washington (DC), USA .
· 2015/05/05	J.F. Morris	CCNY - the Levich Institute seminar series, New York City (NY), USA .
· 2014/12/04	G.H. McKinley	MIT - Non-Newtonian Fluid dynamics Research Group, Boston (MA), USA .
· 2014/03/24	H. Bodiguel	LOF - Solvay/CNRS/University of Bordeaux, Pessac, France .
· 2014/03/11	H. Chraïbi	LOMA - University of Bordeaux, Talence, France .
· 2013/09/25	I. Frigaard	University of British Columbia, Vancouver (BC), Canada .
· 2013/09/24	B. Frisken	Biophysics seminar, Simon Fraser University, Vancouver (BC), Canada .
· 2013/09/04	C. Beaume	Berkeley Fluid seminar, University of California (CA), USA .
· 2012/09/27	P.-P. Cortet	FAST, Orsay, France .
· 2011/09/30	O. Pouliquen	IUSTI, Université de Provence, Marseille, France .
· 2011/09/28	B. Pouligny	CRPP, Pessac, France .
· 2011/09/16	C. Barentin	LPMCN, Université Lyon I, France .
· 2011/06/16	E.R. Weeks	Soft Condensed Matter Group, Emory University, Atlanta (GA), USA .
· 2011/06/14	J. Palacci	CSMR seminar, NYU, New York City (NY) USA .
· 2011/02/17	N. Louvet	LOF, Université Bordeaux I, Pessac, France .
· 2011/01/10	B. Dollet	Groupe Matière Molle, IPR, Rennes, France .
· 2010/09/16	P. Coussot	Groupe de Rhéologie, UR Navier, Champs sur Marne, France .
· 2010/05/18	J. Mathiesen	PGP seminar, University of Oslo, Oslo, Norway .
· 2010/04/30	L. Ramos	LCVN, Université Montpellier 2, France .
· 2010/02/12	M. Lenz	Bag Lunch Seminar, JFI, University of Chicago, Chicago (IL) USA .
· 2009/12/02	F. Pétrelis	LPS, ENS, Paris, France .
· 2009/11/04	L. Ramos	LCVN, Université Montpellier 2, France .
· 2009/07/20	T. Gibaud	MRSEC Seminar, Brandeis University, Waltham (MA), USA .
· 2009/01/23	P. Richard	Groupe Matière Condensée et Matériaux, Rennes, France .
· 2009/01/08	D. Lohse	colloquium, University of Twente, Enschede, The Netherlands .
· 2009/01/06	M. van Hecke	Complex Fluids & Biophysics Seminar, Leiden, The Netherlands .
· 2008/10/14	T. Dauxois	GDR Phénix, ENS Lyon, France .
· 2007/09/19	M.A. Aguirre	Facultad de Ingeniería, Buenos Aires, Argentina .
· 2007/09/14	L. Pugnaroni	Instituto de Física de Líquidos y Sistemas Biológicos, La Plata, Argentina .

▷ **Contributed seminars [8]**

- 2014/09/22-24 Workshop on wall slip in flows of complex fluids, ENS Lyon, **France**.
- 2012/06/07 GDR Mephy, Annual Meeting, Agay, **France**.
- 2009/03/12-13 12^{eme} Rencontre du Non-Linéaire (RNL), Paris, **France**.
- 2008/10/30-31 GDR MePhy: “double réunion thématique (rupture, fracture...)”, Paris, **France**.
- 2008/06/20 Journée des thésards, ENS de Lyon, **France**.
- 2008/03/25-27 11^{eme} Rencontre du Non-Linéaire (RNL), Paris, **France**.
- 2008/03/18 1^{er} Séminaire des Doctorants de l’ED 52 “PHAST”, Lyon, **France**.
- 2007/06/14-15 Journées des thésards, ENS de Lyon, **France**.

STUDENTS SUPERVISED (ALUMS IN ITALIC)

▷ **Graduate Students**

Bosi Mao, co-advised with P. Snabre (2nd year, Physics, *Yielding and syneresis of model hydrogels*)

▷ **Undergraduate Students**

Lucile Favreau, co-advised with P. Snabre (B.S. 2014, ENS Lyon, Physics)