

Julien Chopin

Curriculum Vitæ

SIMM – ESPCI ParisTech
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Education

- 2007–2010 **PhD in Physics**, *École Normale Supérieure*, Paris, FR.
2004–2007 **M.S. “Complex Systems”**, *Université Pierre et Marie Curie*, Paris, FR.
2003–2004 **B.S. Physics**, *École Normale Supérieure de Cachan*, Cachan, FR.

Employment History

- 2015–present **Adjunct Professor**, *SIMM, ESPCI ParisTech*,
Viscoelastic adhesion : large deformations, Instabilities and Heterogeneities.,
with M. Ciccotti (PR) and E. Barthel (DR).
- 2014–2015 **Postdoctoral Scholar**, *Institut Jean Le Rond d'Alembert, Paris*,
Brittle Fracture of Heterogeneous Materials, Avalanches Dynamics,
with L. Ponsou (CR) and E. Bouchaud (DR).
- 2013–2014 **Postdoctoral Scholar**, *Univ. Fed. de Rio de Janeiro, Brésil*,
Fiber Reinforcement of Brittle Materials, Fibers Functionalization,
with Prof. R.D. Toledo Filho.
- 2011–2013 **Postdoctoral Scholar**, *Clark University, USA*,
*Pattern Formation : Flow of Wet Granular Materials, Wrinkles and Singularities
of Thin Elastic Sheet*, with Prof. A. Kudrolli.
- 2007–2010 **PhD Thesis**, *LPS-ENS*,
Statics and Dynamics of a Crack Front in a Disordered Medium,
Dir. A. Boudaoud (PR) and M. Adda-Bedia (DR).
- Jan.–Mar.2007 **Research Project (Master)**, *LPS-ENS*,
Blistering : Growth and Fingering, with A. Boudaoud (PR).
- Apr.–Jul.2005 **Research Project (Master)**, *Harvard University, USA*,
Microrheology of Human Cells Cytoskeleton,
with Prof. J. Fredberg and Prof. G. Lenormand.

Competencies

- Experiment **Field Measurement in Mechanics** – CT Tomography, Digital Image Correlations, Multiscale Analysis. **Surface Functionalization** – Printing, Optical Lithography, Thin Film Deposition in clean room. **Experimental Set-up** – Mechanical Tests at finite strain with in-situ field measurements, instrumented peeling with optical and electronic (SEM) microscopy, Fast measurement of Dynamical Instabilities - Fluid and Solid fragmentation.
- Theory Thin Plate Elasticity Theory, Large Deformation, Singularities and Localization, Fracture Mechanics, Intermittency and Complex dynamics.
- Computing Matlab, Mathematica, Labview, C.
- Language French, English, Portuguese

Publications

Submitted

- [12] Depinning dynamics of crack fronts,
J. Chopin, A. Bhaskar and L. Ponson, soumis à Phys. Rev. Lett.
- [11] Ordered Crumpled States in Twisted Ribbons,
J. Chopin and R.T.D. Filho, soumis à Phys. Rev. E

Publications in International Peer Reviewed Journals

- [10] Dynamic wrinkling and strengthening of a filament in a viscous fluid,
J. Chopin, M. Dasgupta, and A. Kudrolli, Phys. Rev. Lett., 119, 088001, (2017)
- [9] Disclination, e-cones, and their interactions in extensible sheet,
J. Chopin and A. Kudrolli, Soft Matter 12, 4457 (2016).
- [8] Pearling and arching instabilities of a granular suspension on a superabsorbing surface,
J. Chopin and A. Kudrolli, Soft Matter 11, 659 (2015).
- [7] Morphology and dynamics of a crack front propagating in a model disordered material,
J. Chopin, A. Boudaoud and M. Adda-Bedia, J. Mech. Phys. Solids 74, 38-45 (2015)
- [6] Roadmap to the morphological instabilities of a stretched twisted ribbon,
J. Chopin, V. Démery and B. Davidovitch, J. Elasticity 119, 137-189 (2014)
- [5] Helicoids, Wrinkles, and Loops in Twisted Ribbons,
J. Chopin and A. Kudrolli, Phys. Rev. Lett., 111, 174302 (2013)
- [4] Crack Front Dynamics across a Single Heterogeneity,
J. Chopin, A. Prevost, A. Boudaoud and M. Adda-Bedia, Phys. Rev. Lett., 107, 144301,(2011)
- [3] Building Designed Granular Tower One Drop at a Time,
J. Chopin and A. Kudrolli, Phys. Rev. Lett., 107, 208304, (2011)
- [2] The liquid blister test
J. Chopin, D. Vella and A. Boudaoud, Proc. Roy. Soc. A, 464, 2099, 2887-2906 (2008)
- [1] Directional memory and caged dynamics in cytoskeletal remodelling
G. Lenormand, J. Chopin, P. Bursac, J. J. Fredberg and J. P. Butler, Biochem. Biophys. Res. Co., 360, 4 (2007)

Referee for : Physical Review Letter, Physical Review E, European Physical Journal E, Soft Matter.

Seminars and Invited Conferences

Defects and singularities in thin sheets

- Jan 2016 **KITP**, *Geometry, elasticity, fluctuations, and order in 2D soft matter*, Santa Barbara (CA), USA.
- Mars 2016 **APS March Meeting - Invited Session**, *Folded Filaments, Writhing Ribbons and Braided Bundles*, Baltimore (MD), USA.
- Oct. 2015 **Séminaire Biophysstat Lab**, *Université de Lorraine*, Metz, France.

Wrinkles, Creases and Loops in Twisted Ribbons

- Juin 2014 **Séminaire FAST**, *FAST*, Orsay, France.

Séminaire du PMMH, *ESPCI*, Paris, France.

Séminaire de MSC, Laboratoire MSC, France.

Avr. 2013 **Soft Matter Seminar**, *UMASS*, Amherst (MA), USA.

Juin 2013 **SIAM Conference**, Philadelphia (PA), USA.

Self-organized solidifying flow

Juillet 2016 **Séminaire IUSTI**, *Polytech Marseille*, Marseille, France.

Mars 2013 **APS March Meeting**, Baltimore (MD), USA.

Janv. 2012 **Séminaire Mécanique du Solide**, *Institut Jean le Rond d'Alembert*, Paris, France.

Séminaire Gulliver, *ESPCI*, Paris, France.

Séminaire FAST, *FAST*, Orsay, France.

Séminaire ENS Lyon, *Département de Physique*, Lyon, France.

Sept. 2011 **Clark Physics Colloquium**, *Clark University*, Worcester (MA), USA.

Applied Math Seminar, *MIT*, Cambridge (MA), USA.

Mar. 2012 **Squishy Physics Seminar**, *Harvard University*, Cambridge (MA), USA.

Crack front dynamics in heterogeneous materials

Fev. 2017 **Séminaire au laboratoire Physique de la Matière Condensée**, *Ecole Polytechnique*, Palaiseau.

Jan. 2017 **Séminaire général de l'Institut J. le Rond d'Alembert**, *UPMC*, Paris.

Mar. 2010 **Clark Physics Colloquium**, *Clark University*, Worcester (MA), USA.

Séminaire Matière Molle Matière Grise, *LiPhy*, Grenoble, France.

Other conferences

Defects and singularities in thin sheets

Juillet 2015 **9th European Solids Mechanics Conference**, *Polytechnic University of Madrid*, Madrid, Spain.

Mars 2015 **Folding and Creasing of Thin Plate Structures Workshop**, *ESPCI*, Paris, France.

Wrinkles, Creases and Loops in Twisted Ribbons

Mars 2015 **18ème Rencontres du Non-Linéaire**, *Université Paris-Diderot*, Paris, France.

APS March Meeting, San Antonio (TX), USA.

Mars 2014 **APS March Meeting**, Denver (CO), USA.

Mars 2013 **APS March Meeting**, Baltimore (MD), USA.

Aout. 2012 **Journée de la Matière Condensée**, Montpellier, France.

Nov. 2012 **New England Workshop on the Mechanics of Materials and Structures**, Providence (RI), USA.

Oct. 2012 **Greater Boston Area Statistical Physics Meeting**, Waltham (MA), USA.

Building Granular Tower One Drop at a Time

Juil. 2014 **Modeling Granular Media Across Scales Conference**, Montpellier, France.

Juin 2012 **New England Complex Fluid Workgroup**, Cambridge (MA), USA.

Mars 2012 **APS March Meeting**, Boston (MA), USA.

Oct. 2011 **New England Workshop on the Mechanics of Materials and Structures**, Cambridge (MA), USA.

Juin 2011 **Northeastern Granular Materials Workshop**, Boston (MA), USA.

Mars 2011 **New England Complex Fluids Workgroup**, New Haven (CT), USA.

Propagation of a Crack Front in a Control Disorder

Jan. 2017 **Journées de Physique Statistique**, *ESPCI*, Paris, France.

Juin 2015 **ESPCI Soft Matter Days**, *Campus CNRS*, Gif-sur-Yvette, France.

Juin 2010 **New Trends On Growth and Forms**, Agay, France.

Mars 2010 **APS March Meeting**, Portland (OR), USA.

Rencontres du Non-Linéaire, *Institut H. Poincaré*, Paris, France.

Oct. 2009 **GDR Méphy**, *ESPCI*, Paris, France.

Juil. 2009 **Congrès Général de la SFP**, *Ecole Polytechnique*, Palaiseau, France.

Liquid Blister Test

Janv. 2009 **Journées de Physique Statistique**, *ESPCI*, Paris, France.

Mars 2008 **Rencontres du Non-Linéaire**, *ESPCI*, Paris, France.

Janv. 2008 **Journées de Physique Statistique**, *ESPCI*, Paris, France.

References

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