

CV

Ponomarenko Alexandre Philippe Jonathan

alexpono@gmail.com

Birth date: 24/07/1985

Education:

2014-2015: postdoctoral fellowship with T. Améglio and H. Cochard (PIAF-INRA, Université Blaise Pascal, Clermont-Ferrand, France) on plants' strategies to cope with freezing and drought periods.

2012-2013: postdoctoral fellowship with P. Marmottant (LIPhy, Université Joseph Fourier, Grenoble, France) on the acoustics of cavitation in plants and the hygroscopic locomotion of *Equisetum* spores.

2008-2012: PhD thesis with C. Clanet (LadHyX, École Polytechnique, Palaiseau, France) and D. Quéré (PMMH, ESPCI, Paris, France): Critical flows and plants.

2007-2008: M. S. "Physique des liquides" at the University Paris 6.

Fellowship:

Postdoctoral fellowship, ANR acouffreeze, of the french agency for agronomical research, INRA.

Publications:

Published articles:

- Ponomarenko A, Quéré D, Clanet C (2011) A universal law for capillary rise in corners. *Journal of Fluid Mechanics*, 666, pp 146-154. (doi: 10.1017/S0022112010005276)
- Marmottant P, Ponomarenko A, Bienaimé D (2013) The walk and jump of *Equisetum* spores. *Proceedings of the Royal Society B*, 280, pp1-5. (doi: 10.1098/rspb.2013.1465)
- Ponomarenko A, Vincent O, Pietriga A, Cochard H, Badel E, Marmottant P. (2014) Ultrasonic emissions reveal individual cavitation bubbles in water-stressed wood. *Journal of the Royal Society Interface*, 11, pp 1-7. (doi: 10.1098/rsif.2014.0480)

In press:

- Viot E, Ponomarenko A. Popcorn: critical temperature, jump and sound. *Journal of the Royal Society Interface*. to be published in february 2015.
- Viot E, Ponomarenko A, Dehandschoewercker E, Quéré D, Clanet C. Why do all trees break at almost the same wind speed?

Conference presentations

- **Oral presentation.** Ponomarenko A, Quéré D, Clanet C (june 2009) Capillary rise in wedges and Lodging of stems. *Fluid & Elasticity 2009*. Carry le Rouet, France.
- **Oral presentation.** Ponomarenko A (january 2010) Folding of tape measure ribbons. *Journées de Physique Statistique*. Paris, France.
- **Oral presentation.** Clanet C, Ponomarenko A, Quéré D (march 2010) Lodging and Rising. *Seminar at laboratory PIAF, INRA*. Clermont-Ferrand, France.
- **Oral presentation.** Ponomarenko A, Clanet C, Quéré D (july 2010) Bending and buckling of curved structures. *4th European Postgraduate Fluid Dynamics Conference*. Paris, France.
- **Poster.** Ponomarenko A, Clanet C, Quéré D (august 2010) Stem and root lodging. *Dynamics in soft condensed matter*. Cargèse, France.
- **Oral presentation.** Ponomarenko A, Clanet C, Quéré D (november 2010) A universal law for capillary rise in corners. *American Physical Society 63rd annual DFD meeting*. Long Beach, USA.
- **Poster.** Ponomarenko A, Vincent O, Badel E, Cochard H, Marmottant P (august 2012) Combining optics and acoustics to characterise cavitation in trees. *7th Plant Biomechanics International Conference*. Clermont-Ferrand, France.
- **Oral presentation.** Marmottant P, Ponomarenko A, Quillet C (january 2013) Walking and jumping spores. *Rencontre de Physique Statistique*. Paris, France.
- **Oral presentation.** Ponomarenko A, Vincent O, Marmottant P (march 2013) Cavitation in trees: optic and acoustic monitoring. *American Physical Society, March Meeting*. Baltimore, USA.
- **Oral presentation.** Ponomarenko A, Virost E, Quéré D, Clanet C, Vincent O, Marmottant P (may 2013) TREES sTREsSES Tree trunks breaking under strong wind & Sap liquid column breaking under hydric stress. *Seminar at laboratory LPS, ENS*. Paris, France.
- **Oral presentation.** Ponomarenko A, Vincent O, Marmottant P (june 2013) Cavitation in wood channels: monitoring simultaneously optical and acoustical signals. *9th International workshop on sap flow*. Gand, Belgique.
- **Poster.** Ponomarenko A, Vincent O, Marmottant P (june 2014) Cavitation in wood channels: monitoring simultaneously optical and acoustical signals. *Metastable liquids*. Les Houches, France.
- **Poster.** Ponomarenko A, Améglio T. (november 2014) Water freezing in capillary tubes. *workshop on wood*. Nancy, France.

Teaching:

at Université Paris 7:

- Thermodynamics, fall 2009 and fall 2010.
- Hydrodynamics, spring 2008 and spring 2010.
- Hydrodynamics, laboratory experiments, spring 2008.

at École Polytechnique:

- Mechanics of elastic elongated structures, laboratory experiments, spring 2010.

Skills:

Rapid camera. Microscopy: optical microscopy, biphoton microscopy and confocal microscopy. Acoustic measurements. Wind tunnel experiments. Microfluidic design. Matlab. ImageJ. Adobe Creative Suite.

Press:

Tree cavitation: National Geographic, Inside Science, National Public Radio, Science News, Live Science, Jyllands-Posten. *Equisetum* spores: Science News, BBC News, Compulenta, Carnivorous Society, Natural History Magazine's 'Samplings' column, LabTimes, Science magazine Editor's choice.