Curriculum Vitæ

on 9th January 2017

Identity

Civil status

PEYRE RÉMI, Jean-Marc (male)

French citizen

Born 2nd December 1985 in Brive-la-Gaillarde (19), France

Single, no child

Professional details

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Current situation

Researcher in mathematics (under temporary contract) in W. Schachermayer's research group "Financial mathematics" at University of Vienna (Austria).

Curriculum

1991 – 2002: Pupil in some schools of Brive-la-Gaillarde, France. In 2002, got "baccalauréat série S" ($\approx$ A-level, specialised in science) at G. Cabanis high school [with highest honours and jury's congratulations].

2002 – 04: "Classes préparatoires PCSI – PC*" (intensive course focused on physics and chemistry) in Pierre de Fermat Institute (Toulouse, France). In 2004, got admission at *École Normale Supérieure* [PC 2004 exam, rank 1], and got a formal diploma (120 ECTS level) in physics & chemistry from University of Toulouse III.

2004 – 07: Course "Fundamental Mathematics and Applications to Computer Science" at *École Normale Supérieure*. In 2007, got the corresponding diploma [with highest honours], with a memoir on *Large number of interacting particles: Fourier law and mean field Boltzmann's equation*; also got a formal diploma (300 ETCS) in mathematics from University Paris-Sud (speciality "Probability theory & statistics", variant "Probability") [highest honours].

2007 – 11: PhD in mathematics at *École Normale Supérieure de Lyon* (Lyon, France), advisor: Cédric Villani. The thesis' title was "Some questions in probability theory viewed with a physical twist", defended in November 2010 [with highest honours]. Complementary courses taken during the PhD: "Six geometry problems", "Algebraic number theory", "Ranom matrices & Random partitions", "SLE processes and & Conformal invariance in probability theory". Initiation to university teaching at *CIES de Lyon*.

2011 – 2016: "Maître de conférences" ($\approx$ associate professor) at the school of engineering *École des Mines de Nancy* (Nancy, France), holding a chair co-funded by CNRS (French main public research institute).

2016 – 2017: Postdoctoral researcher at University of Vienna (Austria).

Scientific publications

Published or accepted articles

1. Rémi PEYRE – A probabilistic approach to Carne's bound. *Potential Analysis* 29 (2008), # 1, pp. 17 – 36.

2. Rémi PEYRE – Some ideas about quantitative convergence of collision models to their mean field limit. *Journal of Statistical Physics* 136 (2009), # 6, pp. 1105 – 1130.

3. Rémi PEYRE – Sharp equivalence between ρ- and τ-mixing coefficients. *Studia Math.* 216 (2013), # 3, pp. 245 – 270.

4. Rémi PEYRE – Fractional Brownian motion satisfies two-way crossing. To appear in *Bernoulli*.

Submitted papers and pre-publications

5. Christoph CZICHOWSKY, Rémi PEYRE, Walter SCHACHERMAYER, Junjian YANG – Shadow prices, fractional Brownian motion, and portfolio optimisation under transaction costs. Submitted, 23 p.

6. Rémi PEYRE – Comparison between W_2 distance and $\dot{H}^{-1}$ norm, and Localisation of Wasserstein distance. Submitted, 14 p.

7. Rémi PEYRE – Tensorizing maximal decorrelations. arXiv:1004.1602v2, 128 p.

8. Software *cubetransport* & *metacube*. Web page.

Invited speaker

Conferences

- Conference in honour of Cédric Villani, 24 November 2010, Lyon, France. (*Boltzmann: from discrete to continuous models*).

- Rhône-Alpes – Auvergne PDE days, 25 November 2010, Lyon, France. (*McKean–Vlasov buckling*).

- 92nd meeting between mathematicians and theoretical physicists, 26 September 2013, Strasbourg, France. (*Free energy functional in an optimal transportation setting*).

Selected talks in seminars

- Oct. 2008: University of Oxford (United Kingdom), Stochastic Analysis Seminar Series.

- Déc. 2009: University of Geneva (Switzerland), Seminar of physical mathematics.

- Febr. 2011: University of Cambridge (United Kingdom), Seminar of probability theory.

- Nov. 2015: ETH Zürich (Switzerland), ITS seminar on mathematical finance.

Teaching

Teaching assistant at *ENS de Lyon* (2008 – 11):

- [volunteer] Reading group "Population genetics" [3rd year of university], 2008.
- Reading group "Optimal transportation" [3rd year], 2009.
- Reading group "Information theory" [3rd year], 2010.
- Teaching assistance "Probability theory" [3rd year], 2008.
- Teaching assistance "Introduction to probability theory" [3rd year], 2010.
- Initiation to LaTeX [3rd year], 2010-2011.

Associate professor at Mines Nancy (2011 –):

- Teaching assistance "Complex analysis; Distributions" [3rd year], 2011-2012.
- Teaching assistance "Statistical decision and prediction" [3rd year], 2013 – 2015.
- Lesson "Monte Carlo method & Application to random processes" [4th year], 2012 – 2016.
- Supervising 4th year level school projects: "Optimal transportation, theory and practice" (2013), "Devicing a hex-playing software" (2014).
- Supervising 5th year school projects: "Large deviations" (2011), "Fractional Brownian motion for financial processes" (2014), Numerical computation of optimal transportation distances (2015).
- Tutorial supervision of 3rd year students, of "engineer" final internships, of students studying temporarily outside the school.

Administrative responsibilities

- Elected member of the Council of IECN lab (2011-2012).
- Working group on pedagogy at Mines Nancy.

Popularisation and para-mathematical activities

- Writer on the mathematical popularisation website "Images des Mathématiques". Published articls:
  - Trilogy "The mathematics of democracy" [in French]
    I Democracy, a subject for mathematical analysis (2012)

II And the winner of the run-off vote is… (2012)

III The quest for the electoral Grail (2013)

- Plenary speaker at the 2014 Lorraine regional day of the Association of Mathematic Teachers in Public Education.

Awards

Youth

- Limousin Mathematics Tournament 1998, 8th grade: special jury's award.
- Limousin Mathematics Tournament 1998, 11th grade: jury's first prize (team with Olivier BOULAUD).

Miscellaneous abilities

- Fluent written and oral English; basic German.
- Advanced LaTeX skills; C language and HTML programming; Unix systems user.

Other

- Amateur comics scriptwriter (*Anicet le Pingouin*).
- Music (choral singing, folk guitar, piano).
- Long-distance running (10 km, half-marathon, triathlon).