

Julien Vovelle

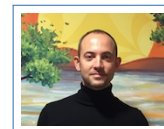
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Born 18/01/1976, Orléans

Married, three children



Education

- 2011 **HDR**, *Université Lyon 1*.
- 2002 **Ph.D. Thesis**, *Université de Provence*.
- 1999 **Agrégation de Mathématiques**.
- 1999 **Magistère de Mathématiques**, *ENS Lyon*.
- 1999 **DEA de mathématiques appliquées**, *Université Lyon 1*.
- 1996–2000 **Elève de l'ENS Lyon**.

Positions

- 2018– **Senior Researcher CNRS, UMPA, ENS de Lyon, UMR 5669**.
- 2008–2018 **Junior Researcher CNRS, ICJ, Université Lyon 1, UMR 5208**.
- 2007–2008 **Junior Researcher CNRS, PIMS, UBC, Vancouver, UMI 3069**.
- 2003–2007 **Junior Researcher CNRS, ENS Rennes/IRMAR, UMR 6625**.

Responsibilities

- 2012-2016 **Member of ICJ's ordinary and scientific boards**.
- 2015-2018 **Scientific head of ICJ's library**.
- 2019-2022 **Director of the Mathematics Department of the ENS de Lyon**.
- 2022-2023 **Deputy director of the Mathematics Department of the ENS de Lyon**.
- 2019-... **PI of the ANR project ADA (PRC 2019)**.
- 2023-... **Director of the ANR SFRI¹ graduate initiative MATHINFI**.

Academic interests

- PDEs Scalar conservation laws, Reaction-diffusion equations
- Numerical Finite Volume method
- Analysis
- Stochastic Invariant measures, diffusion-approximation
- PDEs

Publications and pre-publications

- 38. B. Guelmame, J. Vovelle, *Global dissipative martingale solutions to the variational wave equation with stochastic forcing*, preprint, <https://hal.science/hal-04282928v1>
- 37. M. Leocata, J. Vovelle, *Global solutions to quadratic systems of stochastic reaction-diffusion equations in space-dimension two*, preprint, <https://hal.science/hal-04283612v1>
- 36. M. Leocata, J. Vovelle, *Supremum estimates for parabolic stochastic partial differential equations*, preprint, <https://hal.science/hal-04283613v1>
- 34. M. Briant, A. Debussche, J. Vovelle, *The Boltzmann equation with an external force on the torus : Incompressible Navier-Stokes-Fourier hydrodynamical limit*, *Pure Appl. Anal.* 4 (2022), no. 4, 597–628

- 35. A. Debussche, A. Rosello, J. Vovelle, *Diffusion-approximation for a kinetic spray-like system with random forcing*, Discrete Contin. Dyn. Syst. Ser. S. 14 (2021), no. 8, 2751–2803
- 33. N. Caillerie, J. Vovelle, *Diffusion-approximation for a kinetic equation with perturbed velocity redistribution process*, Ann. Appl. Probab. 31 (2021), no. 3, 1299–1335.
- 32. A. Debussche, J. Vovelle, *Diffusion-approximation in stochastically forced kinetic equations*, Tunis. J. Math. **3** (2021), no. 1, 1–53
- 31. S. Dotti, J. Vovelle, *Convergence of the finite volume method for scalar conservation laws with multiplicative noise : an approach by kinetic formulation*, Stoch. Partial Differ. Equ. Anal. Comput. 8 (2020), no. 2, 265–310
- 30. F. Berthelin, J. Vovelle, *Stochastic isentropic Euler equations*, Ann. Sci. Éc. Norm. Supér. (4), 2019 , 52, 181-254
- 29. S. Dotti, J. Vovelle, *Convergence of approximations to stochastic scalar conservation laws*, Arch. Ration. Mech. Anal. 230 (2018), no. 2, 539-591
- 28. S. De Moor, M. Rodrigues, J. Vovelle, *Invariant Measures for a Stochastic Fokker-Planck Equation*, Kinet. Relat. Models 11 (2018), no. 2, 357–395.
- 27. E. Fedrizzi, F. Flandoli, E. Priola, J. Vovelle, *Regularity of Stochastic Kinetic Equations*, Electron. J. Probab. Volume 22 (2017), paper no. 48, 42 pp,
- 26. A. Debussche and S. De Moor and J. Vovelle, *Diffusion limit for the radiative transfer equation perturbed by a Markovian process*, Asymptotic Analysis, 2016, 98 (1-2), pp. 31-58
- 25. A. Debussche and M. Hofmanová and J. Vovelle, *Degenerate parabolic stochastic partial differential equations : Quasilinear case*, The Annals of Probability, 2016, 44 (3), pp.1916-1955
- 24. A. Debussche and S. De Moor and J. Vovelle, *Diffusion limit for the radiative transfer equation perturbed by a Wiener process*, Kinetic and Related Models, Volume 8, Issue 3, 2015 Pages 467-492.
- 23. A. Debussche and J. Vovelle, *Invariant measure of scalar first-order conservation laws with stochastic forcing*, Probability Theory and Related Fields : Volume 163, Issue 3 (2015), Page 575-611
- 22. M. Pierre and J. Vovelle, *A kinetic approach in nonlinear parabolic problems with L^1 -data*, Z. Anal. Anwend. **31** (2012), no. 3, 307–334.
- 21. S. Benzoni, L. Chupin, D. Jamet, and J. Vovelle, *On a phase field model for solid-liquid phase transitions*. Discrete and Continuous Dynamical System-A, Volume 32, Issue 6, 2012, Pages 1997-2025.
- 20. A. Debussche and J. Vovelle, *Diffusion limit for a stochastic kinetic problem*, Commun. Pure Appl. Anal **11** (2012), no. 6, 2305–2326.
- 19. A. Debussche and J. Vovelle, *Scalar conservation laws with stochastic forcing*, J. Funct. Anal. **259** (2010), no. 4, 1014–1042.
- 18. A. Mellet and J. Vovelle, *Existence and regularity of extremal solutions for a mean-curvature equation*, J. Differential Equations **249** (2010), no. 1, 37–75.
- 17. F. Berthelin and J. Vovelle, *A Bhatnagar-Gross-Krook approximation to scalar conservation laws with discontinuous flux*, Proc. Roy. Soc. Edinburgh Sect. A **140** (2010), no. 5, 953–972.
- 16. A. Debussche and J. Vovelle, *Long-time behavior in scalar conservation laws*, Differential Integral Equations **22** (2009), no. 3-4, 225–238.
- 15. S. Martin and J. Vovelle, *Convergence of implicit finite volume methods for scalar conservation laws with discontinuous flux function*, M2AN Math. Model. Numer. Anal. **42** (2008), no. 5, 699–727.
- 14. S. Martin and J. Vovelle, *Large-time behaviour of entropy solutions to conservation laws on bounded domain*, Quart. Appl. Math. **65** (2007), no. 3, 425–450.
- 13. L. Desvillettes, K. Fellner, M. Pierre, and J. Vovelle, *About global existence for quadratic systems of reaction-diffusion*, Adv. Nonlinear Stud. **7** (2007), no. 3, 491–511.
- 12. N. Alibaud, J. Droniou, and J. Vovelle, *Occurrence and non-appearance of shocks in fractal burgers equations*, JHDE **4** (2007), no. 3, 479–499.

- 11. B. Merlet and J. Vovelle, *Error estimate for the finite volume scheme applied to the advection equation*, Num. Math. **106** (2007), no. 1, 129–155.
- 10. F. Bachmann and J. Vovelle, *Existence and uniqueness of entropy solution of scalar conservation laws with a flux function involving discontinuous coefficients*, Comm. Partial Differential Equations **31** (2006), no. 1-3, 371–395.
- 9. M. Ohlberger and J. Vovelle, *Error estimate for the approximation of nonlinear conservation laws on bounded domains by the finite volume method*, Math. Comp. **75** (2006), no. 253, 113–150 (electronic).
- 8. J. Droniou, C. Imbert, and J. Vovelle, *An error estimate for the parabolic approximation of multidimensional scalar conservation laws with boundary conditions*, Ann. Inst. H. Poincaré Anal. Non Linéaire **21** (2004), no. 5, 689–714.
- 7. C. Imbert and J. Vovelle, *A kinetic formulation for multidimensional scalar conservation laws with boundary conditions and applications*, SIAM J. Math. Anal. **36** (2004), no. 1, 214–232.
- 6. J. Droniou, T. Gallouet, and J. Vovelle, *Global solution and smoothing effect for a non-local regularization of a hyperbolic equation*, J. Evol. Equ. **3** (2003), no. 3, 499–521.
- 5. A. Michel and J. Vovelle, *Entropy formulation for parabolic degenerate equations with general Dirichlet boundary conditions and application to the convergence of FV methods*, SIAM J. Numer. Anal. **41** (2003), no. 6, 2262–2293.
- 4. R. Eymard, T. Gallouët, and J. Vovelle, *Limit boundary conditions for finite volume approximations of some physical problems*, J. Comput. Appl. Math. **161** (2003), no. 2, 349–369.
- 3. A. Porretta and J. Vovelle, *L^1 solutions to first order hyperbolic equations in bounded domains*, Comm. Partial Differential Equations **28** (2003), no. 1-2, 381–408.
- 2. N. Seguin and J. Vovelle, *Analysis and approximation of a scalar conservation law with a flux function with discontinuous coefficients*, Math. Models Methods Appl. Sci. **13** (2003), no. 2, 221–257.
- 1. J. Vovelle, *Convergence of finite volume monotone schemes for scalar conservation laws on bounded domains*, Num. Math. **90** (2002), no. 3, 563–596.