

CURRICULUM VITAE
Antoine Mellet

Department of Mathematics
Mathematics Building
University of Maryland
College Park, MD 20742-4015
E-mail: mellet@math.umd.edu

Education

- Undergraduate Institution: **École Normale Supérieur de Lyon** (1996-1999)
- Graduate Institution: **Université Toulouse III**, France (1999-2003)
- Postdoctoral Institution: **University of Texas at Austin** (2003-2006)

Degrees

- **Magistère de Mathématiques**, École Normale Supérieur de Lyon (1999).
- **Agrégation de Mathématiques** (1999).
- **Ph.D. in Mathematics**, Université Toulouse III, December 2002.
Thesis Advisor: **Pierre Degond**
Postdoctoral Advisor: **L. A. Caffarelli**

Appointments

- July 2008 - now: Assistant Professor at the University of Maryland, College Park
- July. 2006 - June 2008: Assistant Professor at the University of British Columbia
- Sept. 2003 - July 2006: Postdoctoral fellow at the University of Texas at Austin
- Sept. 2000 - Aug. 2003: Teaching Assistant at the Université Toulouse III

Grants & Fellowships

- **N.S.E.R.C. Discovery Grant**. April 2007-April 2012.
- **N.S.F. Individual Research Grant**, DMS-0456647 , “On the Homogenization of Free Boundary Problems” June 2005-May 2008.
- University of Texas R. H. Bing Fellowship, Sept. 2003-Aug. 2006.

Publications

- (28) A. Mellet, J. Nolen, J.-M. Roquejoffre and L. Ryzhik, *Stability of Generalized Transition Fronts*, Comm. in P.D.E., to appear.
- (27) I.C. Kim, A. Mellet, *Homogenization of one-phase Stefan-type problems in periodic and random media*, Transactions of the AMS, to appear.
- (26) A. Mellet, A. Vasseur, *L^p estimates for quantities advected by a compressible flow*, submitted, J. of Math. Ana. and App., to appear.
- (25) I.C. Kim, A. Mellet, *Homogenization of a Hele-Shaw problem in periodic and random media*, Arch. Rat. Mech. Ana., to appear.
- (24) A. Mellet, A. Vasseur, *A bound from below for the temperature in compressible Navier-Stokes equations*, Monatsh. Math., to appear.
- (23) L.A. Caffarelli, A. Mellet, *Random Homogenization of Fractional Obstacle Problems*, Netw. Heterog. Media 3 (2008), no. 3, 523–554.
- (22) L.A. Caffarelli, A. Mellet, *Random Homogenization of an Obstacle Problem*, Annales de l’IHP, Analyse non linéaire, to appear.
- (21) A. Mellet, A. Vasseur, *Asymptotic analysis for a Vlasov-Fokker-Planck/Compressible Navier-Stokes system of equations*, Comm. Math. Phys. 281 (2008), no. 3, 573-596.
- (20) A. Mellet, A. Vasseur, *Existence and uniqueness of global strong solutions for one-dimensional compressible Navier-Stokes equations*, SIAM Journal on Mathematical Analysis, **39** (2007/08), no. 4, 1344-1365.
- (19) A. Mellet, A. Vasseur. *Global weak solutions for a Vlasov-Fokker-Planck / Navier-Stokes system of equations*, Math. Models Methods Appl. Sci. **17** (2007), no. 7, 1039-1063.
- (18) L.A. Caffarelli, K.-A. Lee, A. Mellet, *Flame propagation in one-dimensional stationary ergodic media*, Math. Models Methods Appl. Sci., **17** (2007), 155-169.
- (17) L.A. Caffarelli, A. Mellet, *Capillary drops: Contact angle hysteresis*, Calc. Var. Partial Differential Equations **29** (2007), no. 2, 141-160.
- (16) A. Mellet, A. Vasseur, *On the barotropic compressible Navier-Stokes equation*, Comm. in P.D.E., **32**, (2007) 431-452.
- (15) A. Mellet, A. Vasseur, *Homogenization of a nonlinear transport equation*, Asymptotic Analysis, **51**, (2007), 157-166.

- (14) L.A. Caffarelli, A. Mellet, *Capillary drops on an inhomogeneous surface*, Perspectives in Nonlinear P.D.E.: In honor of Haim Brezis. Contemporary Mathematics 175–201, Contemp. Math., **446**, Amer. Math. Soc., Providence, RI, 2007.
- (13) L. A. Caffarelli, K.-A. Lee, A. Mellet, *Homogenization and flame propagation in periodic excitable media: The asymptotic speed of propagation*, Comm. Pure and Applied Math, **59** (2006), 501-525.
- (12) J.P. Bourgade, A. Mellet, L. Mieussens, *Numerical comparison between two Spherical Harmonics Expansion models and a kinetic equation*, Math. Comput. Modeling, **40** (2004), no. 7-8, 777–795.
- (11) L.A. Caffarelli, K.-A. Lee, A. Mellet *Singular limit and Homogenization for flame propagation in periodic excitable media*, Arch. Rat. Mech. Ana., **172** (2004), 153-190.
- (10) A. Mellet, S. Mischler, *Uniqueness and semigroup for the Vlasov equation with elastic-diffusive reflexion boundary conditions*, Applied Math. Lett., **17** (2004), no. 7, 827–832.
- (9) T. Goudon, A. Mellet, *Homogenization and diffusion asymptotics of the linear Boltzmann equation*, Control, Optimisation and Calculus of Variations, **9** (2003), 371-398.
- (8) A. Mellet, *Macroscopic model for coupled surface and volume collisions in semiconductor superlattices*, Asymptotic Analysis **33** (2003), 337-361.
- (7) T. Goudon, A. Mellet, *On fluid limit for the semiconductors Boltzmann equation*, Journal Diff. Equations, **189** (2003), 17-45.
- (6) A. Mellet, B. Perthame, *L^1 contraction property for a Boltzmann equation with Pauli statistic*, C. R. Acad. Sci. Paris, Ser. I, **335** (2002), 337-340.
- (5) T. Goudon, A. Mellet, *Discrete version of the SHE asymptotic: Multigroup neutron transport equations*, Journal Math. Physics, **43** (2002), 3232-3260.
- (4) T. Goudon, A. Mellet, *Diffusion approximation in heterogeneous media*, Asymptotic Analysis, **28** (2001), 331-358.
- (3) A. Mellet, *Diffusion limit of a nonlinear kinetic model without the detailed balance principle*, Monatshefte für Mathematik, **134** (2002), 305-329.
- (2) P. Degond, V. Latocha, S. Mancini, A. Mellet, *Diffusion dynamics of an electron gas between two plates*, Meth. Appl. of Analysis, **9** (2002), 127-150.

- (1) N. Ben Abdallah, P. Degond, A. Mellet, F. Poupaud, *Electron transport in semiconductor superlattices*, Quarterly Appl. Math., **61** (2003), no. 1, 161-192.