

Stefano Scrobogna

Curriculum Vitae

personal

Italian citizen
Born 25 October 1990
Trieste
Italy

languages

Italian mother tongue
French, Spanish &
English fluent
German intermediate

Education

- 2014–2017 **Ph.D.** in Applied Mathematics Université de Bordeaux
On some models in Geophysical fluids
Defended the 1st June 2017
Ph.D. Advisor: Prof. Marius G. Paicu
- 2012–2014 **Masters** of Science Rheinische Friedrich-Willhems Universität Bonn
Specializations in Partial Differential equations and Mathematical Analysis.
Master Thesis: *On the mass splitting problem.*
Grade *Sehr Gut* (maximum grade)
Advisor: Prof. Juan J.L. Velazquez.
- 2009–2012 **Bachelor** in Mathematics Università degli Studi di Trieste
110 *cum laude*/110
- 2011–2012 **ERASMUS program** Universidad Autónoma de Madrid

Employment

- 2021– **Dipartimento di Matematica e Geoscienze** Trieste, Italy
Assistant professor (RTDb)
- 2020–2021 **Departamento de Análisis Matemático** Sevilla, Spain
PostDoc Juan de la Cierva
Under the mentorship of Prof. Francisco Gancedo
- 2019–2020 **IMUS** Sevilla, Spain
ERC PostDoc researcher
Sharp interfaces in Fluid Dynamics under the mentorship of Prof. Francisco Gancedo
- 2017–2019 **BCAM** Bilbao, Basque Country, Spain
Severo Ochoa PostDoc researcher
PostDoc in fluid dynamics under the mentorship of Prof. Arghir Zarnescu
- 2014–2017 **UNIVERSITY OF BORDEAUX** Bordeaux, France
Ph.D. researcher
Ph.D thesis on the study of various geophysical hydrodynamical systems

Teaching

- Fall 2021 **UNIVERSITÀ DI TRIESTE** Trieste, Italy
Teaching job
Mathematical Methods for the AI

Fall 2020 **UNIVERSIDAD DE SEVILLA** Sevilla, Spain
Teaching job
Mathematics for chemists, first year, theory and exercise class, 80 hours

Fall 2016 **UNIVERSITÉ DE BORDEAUX** Bordeaux, France
Teaching job
Mathématiques pour la Biologie, first year, theory and exercise class, 64 hours

Spring 2014 **UNIVERSITY OF BONN** Bonn, Germany
Teaching job
Exercise tutor for "Stochastic processes and Markov chains, third year bachelor/first year master

Scholarships & grants

2019 **Juan de la Cierva Formación** Universidad de Sevilla
Highly competitive national financial aid for postdoctoral incorporation

2014 **Graduate Scholarship** Université de Bordeaux
Three years full-time salary awarded by the French Ministry for Higher Education for a Ph. D. project (*Bourse blanche*)

2011 **ERASMUS** EU
Scholarship ERASMUS, 10 months

2009–2012 **Undergraduate scholarships** Istituto per le scienze L. Fonda
Scholarship "Luciano Fonda" in mathematics

Articles in peer-reviewed journals

18. R. Granero-Belinchón, S. Scrobogna, *Global well-posedness and decay of a viscous water wave model*, Physics of Fluids 33, 102115 (2021).
17. F. Gancedo, R. Granero-Belinchón, S. Scrobogna, Global existence in the Lipschitz class for the N-Peskin problem, to appear in IUMJ, <https://arxiv.org/abs/2011.02294>.
16. S. Scrobogna, *Zero limit of entropic relaxation time for the Shliomis model of ferrofluids*, to appear in J. of Mathematical Analysis and Applications, <https://arxiv.org/abs/1802.03733>.
15. S. Scrobogna, *Well-posedness of an asymptotic model for capillarity-driven free boundary Darcy flow in porous media in the critical Sobolev space*, Nonlinear Analysis Real World Applications, Volume 60, 2021.
14. R. Granero-Belinchón, S. Scrobogna, *Well-posedness of the water-wave with viscosity problem*, J. Differential Equations, 276(5), 2021, 96-148.
13. R. Granero-Belinchón, S. Scrobogna, *On an asymptotic model for free boundary Darcy flow in porous media*, SIAM J. Math. Anal., 52(5), 4937–4970.
12. F. Gancedo, R. Granero, S. Scrobogna, *Surface tension stabilization of the Rayleigh-Taylor instability for a fluid layer in a porous medium*, Annales de l'Institut Henri Poincaré / Analyse non lineaire, 37(6), 2020, 1299-1343.

11. R. Granero-Belinchón, S. Scrobogna, *Well-posedness of a water wave model with viscous effects*, Proc. Am. Math. Soc., **148**(12), 2020, 5181–5191.
10. S. Scrobogna, *Global existence and convergence for non-dimensionalized incompressible Navier-Stokes equations in low Froude number regime*, Discrete Contin. Dyn. Syst. 2020, **40**(9): 5471-5511.
9. R. Granero-Belinchón, S. Scrobogna, *Models for damped water waves*, SIAM J. Appl. Math., **79**(6), 2530–2550
8. R. Granero-Belinchón, S. Scrobogna, *Asymptotic models for free boundary flow in porous media*, Physica D, **392**, (2019) 1-16.
7. V.-S. Ngo, S. Scrobogna, *On the influence of gravity on density-dependent incompressible periodic fluids*, J. Differential Equations **267** (2019) 1510-1559.
6. F. De Anna, S. Scrobogna, *A global well-posedness result for the Rosensweig system of ferrofluids*, Rev. Mat. Iberoam, **36**(3), 2020, pp. 895–938.
5. S. Scrobogna, *Some remark on the existence of infinitely many nonphysical solutions to the incompressible Navier-Stokes equations*, J. of Mathematical Analysis and Applications, **470** (2019), no. 1, 226–234
4. S. Scrobogna, *On the global well-posedness of a class of 2D solutions for the Rosensweig system of ferrofluids*, J. Differential Equations **266** (2019) 2718–2761
3. S. Scrobogna, *Highly rotating fluids with vertical stratification for periodic data and vanishing vertical viscosity*, Rev. Mat. Iberoam. **34** (2018), no. 1, 1–58.
2. V.-S. Ngo, S. Scrobogna, *Dispersive effects of weakly compressible and fast rotating inviscid fluids*, Discrete Contin. Dyn. Syst. **38** (2018), no. 2, 749–789.
1. S. Scrobogna *Derivation of limit equations for a singular perturbation of a 3D periodic Boussinesq system*, Discrete Contin. Dyn. Syst. **37** (2017), no. 12, 5979–6034.

Preprints

1. S. Scrobogna, J. J. Velazquez, *A hyperbolic problem with non-local constraint describing ion-rearrangement in a model for ion-lithium batteries*, <https://arxiv.org/abs/1502.05843>.

Research seminars and presentations

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|----------|--|------------------------|
| Nov 2020 | Oberseminar Mathematik in den Naturwissenschaften
On the effect of viscosity in surface gravity wave | Online seminar |
| Nov 2019 | Conversaciones Fluidas
Water-waves with damping effects: a survey | Sevilla, Spain |
| Oct 2019 | SISSA Mathematical analysis seminar
Stabilization of an underlying fluid layer in a porous medium | Trieste, Italy |
| Sep 2019 | PDEs in Fluid Mechanics
Stabilization of an underlying fluid layer | Castro Urdiales, Spain |
| May 2019 | Homogenization and other topics in PDE
1D asymptotic models for free boundary incompressible fluids | Madrid, Spain |

- Apr 2019 **Italian Romanian conference in Applied Mathematics** Udine, Italy
Asymptotic models for free boundary Darcy flows
- Feb 2019 **RSME Congress, PDE Fluids** Santander, Spain
Asymptotic models for free boundary Darcy flows
- Nov 2018 **Fudan University seminar** Shanghai, China
Asymptotic models for free boundary Darcy flows
- Nov 2018 **Fudan University seminar** Shanghai, China
Zero entropic relaxation time limit for a ferromagnetic fluid model
- May 2018 **Analyse, analyse numérique et contrôle des milieux continus** Bucarest, Romania
Global and asymptotic behavior for a Ferrofluid model
- May 2018 **Seminaire d'EDP** Rouen, France
Zero entropic time limit for the Shliomis model of Ferrofluids
- Mar 2018 **Journées JEF 2018** Nancy, France
Zero entropic time limit for the Shliomis model of Ferrofluids
- Jan 2018 **Seminario de Ecuaciones en Derivadas Parciales** Santander, Espagne
Global existence and convergence for a 3D hydrodynamical parabolic-hyperbolic system , Universidad de Cantabria
- Déc 2017 **Seminario di Analisi Matematica** Trieste, Italie
Low Froude number dynamics of incompressible flows, DMI, Università degli Studi di Trieste
- Oct. 2017 **Vième Colloque international EDP-Normandie** Caen, France
On the evolution of stratified periodic fluids, poster session
- Sep. 2017 **Mathematical Analysis of Incompressible Fluid Flows** Brighton, UK
On the dynamics of incompressible flows in low Froude number regime, poster session
- Aout 2017 **Dispersive hydrodynamics and oceanography** Les Houches, France
Limit dynamics of strongly stratified fluids
- Juin 2017 **Séminaire d'EDP et physique mathématique** Talence, France
Limit dynamics of primitive equations, IMB, Université de Bordeaux
- Mar. 2017 **Journées Jeunes EDPsites 2017** Autrans, France
Poster session, *Long time behavior of stratified fluids*
- Nov. 2016 **Rencontres Rouennaises d'EDP 2016** Rouen, France
Poster session, *Planetary dynamics of isentropic fluids*
- Aug. 2016 **XIII Colloque Franco-Roumain de Mathématiques Appliquées** Iasi, Roumania
On slightly compressible and fast rotating fluids
- March 2016 **Journé de l'école doctorale** Talence, France
Poster session, *Primitive equations and singular perturbation problems*

Jan. 2016 **Tematic seminar**

Trieste, Italy

Dispersion and resonance for singular perturbation problems, Seminar , Dipartimento di Matematica e Geoscienze, Università degli Studi di Trieste, Trieste (Italy)

Feb. 2015 **Séminaire des doctorants EDP/Physique mathématiques** Talence, France

Introduction to evolutionary problems