Lars Eric Hientzsch

CONTACT INFORMATION

Institut Fourier,
Université de Grenobles Alpes
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Citizenship : German

RESEARCH INTERESTS

Analysis of PDE, compressible and incompressible fluids,Korteweg fluids, (quantum) vortices, low Mach number theory, dispersive estimates, nonlinear Schrödinger eq.

EMPLOYMENT

Institut Fourier, Université Grenoble Alpes
Post-doc, from November 2019

- member of the research group Mathematical Physics, under the supervision of Christophe Lacave,
- member of the interdisciplinary research group "MathInFluids" at ENS Lyon

Università degli Studi dell'Aquila
Research assistant (Borsista), from November 2018 to October 2019

- Research project: "Analysis of coherent structures in quantum fluids" under the supervision of D. Donatelli

Gran Sasso Science Institute
Visting researcher, from November 2018 to January 2019

EDUCATION

Gran Sasso Science Institute

Ph.D. in Mathematics of Natural, Social and Life Sciences, awarded with honors, October 2019 (Program held in collaboration between GSSI and SISSA of Trieste, title awarded by both institutes).

- Dissertation: "Nonlinear Schrödinger equations and quantum fluids non-vanishing at infinity: Incompressible limit and quantum vortices",
- Advisors: Paolo Antonelli, Pierangelo Marcati
- Referees: D. Bresch, C. Lacave
- Examination committee: S. Daneri, D. Donatelli, V. Georgiev, C. Lacave, C. Marchioro

Université de Franche-Comté

Pre-Ph.D. research traineeship, from March to July 2015

Università di Pisa

Master of Science in Mathematics, January 2015

Rheinische Friedrich-Wilhelms Universität Bonn

Bachelor of Science in Mathematics, October 2012

Frauenlob Gymnasium Mainz

Allgemeine Hochschulreife (Abitur), March 2009

Publications

P. Antonelli, L.E. Hientzsch and P. Marcati, *Global well-posedness for nonlinear Schrödinger equations with non-vanishing boundary conditions at infinity* (in preparation).

P. Antonelli, L.E. Hientzsch and P. Marcati, *The incompressible limit for finite energy weak solutions of Quantum Navier-Stokes equations*, Proceedings of the XVII International Conference on Hyperbolic Problems, Theory, Numerics and Applications, editors: A. Bressan, M. Lewicka, D. Wang, Y. Zheng (2018).

P. Antonelli, L.E. Hientzsch and S. Spirito, *Global existence of finite energy weak solutions to the quantum Navier–Stokes equations with non-trivial far-field*, preprint arXiv:2001.01652 (2020).

P. Antonelli, L.E. Hientzsch and P. Marcati, *On the low Mach number limit for the Quantum Navier–Stokes equations*, preprint arXiv:1902.00402 (2019).

P. Antonelli, L.E. Hientzsch, P. Marcati and H. Zheng, *On some results for Quantum Hydrodynamical Models,* RIMS Kôkyûroku Proceeding No. 2070, Mathematical Fluids and Gas dynamics (2018).

Conference Talks

(**I** – Invited, **C** – Contributed)

(C) EMS Summer School Mathematical aspects of fluid flows, Kacov, Czech Rep. (May 2019)

(C) XVIII Italian Hyperbolic Meeting IperPa2019, Palermo. (May 2019)

(C) 5th Applied Mathematics Münster Symposium, Transport, Mixing and Fluids, WWU Münster. (February 2019)

(I) Winter School on Fluid Dynamics, Dispersive Equations and Quantum Fluids, Bressanone. (December 2018)

(C) School and Conference: Geometric function theory in fluid mechanics, BGSmath Barcelona. (July 2018)

(C) XVII International Conference on Hyperbolic Problems: Theory, Numerics, Applications, Penn State University. (June 2018)

(C) Great Lakes Mathematical Physics Meeting 2018, Michigan State University. (June 2018)

(C) PDE colloquium GSSI - UNIVAQ, L'Aquila. (January 2017)

Invited Seminars

Incompressible limit for Quantum Navier–Stokes equations and related problems, Mathematical Physics Seminar, Institut Fourier, Grenoble. (May 2019)

Honors and Awards

2015 *3 year PhD Fellowship*
Gran Sasso Science Institute, L'Aquila

2015 *Pre-PhD Research Fellowship*
awarded by University of Pisa, carried out at Université of Franche-Comté

Organisation of Scientific Events

136*th European Study Group with Industry (ESGI) L'Aquila*, co-organized, event awarded partial funding by MI-NET grant, GSSI, L'Aquila. (May 2018),

Teaching Experience

Spring	2020	Teaching Assistant in Analyse approfondie, L1 Mathematics, Université Grenoble Alpes
Fall	2014	Teaching Assistant: Mathematics 1, Faculty of Biology, Pisa
Fall	2013	Responsible "Precorso Matematica", Faculty of Geology, Pisa
Spring	2011	Organisation of popular science events in schools on behalf of Hausdorff Center of Mathematics, Bonn
Fall	2010	Teaching Assistant, Mathematics 1, Faculty of Agricultural economics and nutrition sciences, Bonn

Relevant Skills

Languages: German (mother tongue), English (fluent), Italian (fluent), French (fluent)