

# GIUSEPPE PUCCI

Curriculum Vitae - December 19, 2022

National Research Council of Italy, CNR-Nanotec - Ponte P. Bucci, Cubo 33C, Rende 87036 Italy  
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I am a **researcher in physics** in the National Research Council of Italy (CNR), located at the University of Calabria. I am fascinated by the possibility of exploring fundamental questions in physics by working on relatively simple, table-top experiments. My primary research lies in phenomena at fluid interfaces, including active systems and macroscopic analogs of quantum phenomena. My research approach also benefits from mathematical modelling and continuous collaboration with theoreticians.

Previously I worked at Università della Calabria, Université Paris Diderot, Massachusetts Institute of Technology, Brown University and Institut de Physique de Rennes.

## EDUCATION

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**University of Paris VII Denis Diderot and University of Calabria.** France/Italy  
*Ph.D. in Physics: Fluid Dynamics and Science of Mesophases.* 2008–2011

Mention: *Very Honorable, with Committee Praise.*

Committee composed of:

Riccardo Barberi (Università della Calabria, co-supervisor);  
Roberto Bartolino (Università della Calabria, examiner);  
Martine Ben Amar (École Normale Supérieure, examiner);  
Christophe Clanet (CNRS - École Polytechnique, president);  
Yves Couder (Université Paris VII Denis Diderot, supervisor);  
Francesco Mantegazza (Università di Milano Bicocca, referee);  
Marc Rabaud (Université Paris-Sud, referee).

- Research on the Faraday instability in floating drops: an example of a hydrodynamic instability in a domain with flexible boundaries.

Collaboration with Prof. Martine Ben Amar (Ecole Normale Supérieure).

- Experimentally characterized and theoretically rationalized the equilibrium shapes of floating liquid drops deformed by the radiation pressure of surface waves.
- Experimentally characterized the non-equilibrium behavior of floating drops deformed by radiation pressure; rationalized their self-propulsion.

- Research on electrohydrodynamics and topological defects in nematic liquid crystals.
  - Characterized the variation of the threshold of a topological transition in nematic mixtures as a function of the concentration of the components.

**University of Calabria.** Rende (CS), Italy  
*Master in Physics of Matter. 110/110 cum laude* 2006–2008

- Six-month internship at University Paris VII: Faraday instability in deformable domains.
  - Investigated the equilibrium shapes of drops deformed by the radiation pressure of surface waves.

**University of Calabria.** Rende (CS), Italy  
*Bachelor in Physics. 110/110 cum laude* 2003–2006

- Three-month internship at University of Calabria: “A novel method to create probes for atomic force spectroscopy”.
  - Developed a new technique to obtain probes for the Atomic Force Microscope with a typical curvature radius of 100 nm.

## RESEARCH EXPERIENCE

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**National Research Council of Italy (CNR), Institute of Nanotechnology.** Rende, Italy  
*Researcher* 2021–present

- Research subject: Self-propulsion at fluid interfaces and hydrodynamic analogs.

**Institute of Physics of Rennes, CNRS and University of Rennes 1.** Rennes, France  
*Researcher funded by the program CNRS-Momentum.* 2018–2020

- PI of the project “Self-organization of fluid and solid structures on fluid interfaces at the macroscopic scale”. Supervising a post-doc. Topics:
  - Active volatile drops on liquid baths.
  - Faraday instability in a rotating liquid.
  - Capillary surfers: wave-driven particles at a fluid interface (with Prof. D. Harris at Brown University).

**Brown University, School of Engineering.** Providence (RI), USA  
*Post-doctoral Research Associate in the group of Prof. Daniel M. Harris.* 2017–2018

- Research subject: Forces on capillary floaters.
  - Experimentally characterized and theoretically rationalized the friction experienced by centimetric objects that slide on water.
  - Experimentally characterized and theoretically rationalized the capillary attraction between centimetric objects resting on water (“Cheerios effect”).

**Massachusetts Institute of Technology, Dept. of Mathematics.** Cambridge (MA), USA  
*Post-doctoral Research Associate in the group of Prof. John W. M. Bush.* 2015–2017

- Research subject: Walking droplets as a hydrodynamic analog of microscopic systems.
  - Characterized the non-specular reflection of a walking droplet from a planar wall.
  - Characterized the interaction of walking droplets with single and double slits.
  - Characterized the refraction-like behavior of walking droplets experiencing a reduction in liquid depth.
  - Experimentally investigated the diffusion of a droplet bouncing on a field of standing waves.
  - Experimentally investigated the spin lattices of walking droplets.

**University of Calabria, Dept. of Physics.** Rende (CS), Italy  
*Post-doc in the group of Prof. Riccardo Barberi* 2012–2015

- Research on the project “Innovative nanotechnologic platforms for drugs delivery in Ophthalmology”. Collaboration with Marco Lombardo (Doctor of Medicine, Vision Engineering Italy).
  - PI of the group investigating the interaction of ultraviolet light with the human cornea.
  - Designed an apparatus that mimics the physiological conditions of the eye for the purpose of measuring the light absorbance of the human cornea and detecting the presence of clinical solutions inside the tissue.
  - Tested a number of trans-epithelial commercial solutions: assessed which solutions were effectively absorbed and could be used for medical treatment.
- Research subject n.2: electro-convective instabilities and topological defects in nematic liquid crystals.
  - Discovered curved patterns of electro-convection in nematics with planar-periodic alignment.
  - Characterized the topologically non-equivalent textures generated by the electrohydrodynamics of nematic liquid crystals.

## RESEARCH VISITS

### Brown University, School of Engineering.

Providence (RI), USA

*Two-month visit to the group of Prof. Daniel M. Harris.*

*Summer 2022*

- Research subject: wave-mediated interactions of surface spinners.

### Brown University, School of Engineering.

Providence (RI), USA

*Two-month visit to the group of Prof. Daniel M. Harris.*

*Summer 2019*

- Research subject: capillary surfers, wave-driven particles at a vibrating fluid interface.

### Massachusetts Institute of Technology, Dept. of Mathematics.

Cambridge (MA), USA

*Eight-month visit as a post-doctoral Fellow in the group of Prof. John W. M. Bush.*

*2014*

- Experimentally demonstrated and theoretically rationalized the partial coalescence of a soap bubble with a soap film.
- Designed and set up an experiment for the study of walking droplets interacting with a single slit.

## SKILLS AND EXPERTISE

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### Fluid Dynamics

fluid interfaces, surface waves, surface tension, surface reconstruction.

### Soft Matter

active matter, liquid crystals, corneal tissues, AFM, cleanroom techniques.

### Non-linear physics

pattern formation, self-organization.

### Mechanics

design and construction of setups for mechanical vibrations.

### Fabrication

3D printing and laser cutting.

### Computer Languages

C/C++, MATLAB.

### Software & Tools

Mathematica, Fusion 360 (3D designing), Adobe Illustrator.

### Languages

Italian (first language), French (fluent), English (fluent).

## GRANTS

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### Short-Term Mobility grant.

CNR-Nanotec, Rende, Italy

*National Research Council of Italy (CNR).*

*2022*

To visit the Harris' Laboratory in the School of Engineering at Brown University (RI), USA.

### Short-Term Mobility grant.

CNR-Nanotec, Rende, Italy

*National Research Council of Italy (CNR).*

*2021*

- 2100€ for the visit to CNR-Nanotec of Antonin Eddi, researcher in the French CNRS.

### Project grant.

Institute of Physics of Rennes, France

*French National Center for Scientific Research (CNRS), Momentum program.*

*2018–2020*

- About 350 k€ (included a personal salary and two-year salary for a post-doc).

### Workshop grant.

Brown University, USA

*National Science Foundation of U.S.A. (NSF), Condensed Matter Physics program.*

*2018*

- 5000 \$ for organizing the workshop “Hydrodynamic Quantum Analogs 8” (with Prof. Daniel Harris, award number 1841840).

### Mobility grant.

University of Paris VII, France

*Université Franco-Italienne.*

*2009–2011*

- About 4500 € to spend for travels during the Ph.D.

## FELLOWSHIPS

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### Post-doctoral Fellowship

University of Haifa, Israel

*The Hatter Departement of Marine Technology.*

2015–2016

- To spend at the Massachusetts Institute of Technology, Cambridge (MA).

### Ph.D. fellowship.

University of Paris VII, France

*Ph.D. funded by Université Franco-Italienne*

2008–2011

- To spend at University of Paris VII (main institution) and University of Calabria (secondary institution).

## AWARDS

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### Second best presentation in Physics of Matter, Italian Physical Society.

Italy (virtual)

*Meeting of the Italian Physical Society.*

2021

- Presentation “Hydrodynamic Spin Lattices”.

### Gallery of Fluid Motion Award Winner.

Denver (CO), USA

*American Physical Society - Division of Fluid Dynamics*

Nov. 2017

- Video “Spin lattices of walking droplets”.

### Travel award.

Denver (CO), USA

*American Physical Society - Division of Fluid Dynamics.*

Nov. 2017

- 500\$ to participate to the meeting of the Division of Fluid Dynamics of the American Physical Society.

### Milton van Dyke Award Winner.

Boston (MA), USA

*American Physical Society - Division of Fluid Dynamics.*

Nov. 2015

- Video “The merger of a bubble and a soap film”.

### Milton van Dyke Award Winner.

San Francisco (CA), USA

*American Physical Society - Division of Fluid Dynamics.*

Nov. 2014

- Video “Faraday instability in floating drops”.

### Best presentation in Physics of Matter, Italian Physical Society.

Naples, Italy

*Meeting of the Italian Physical Society.*

2012

- Presentation “Faraday instability in deformable domains”.

## TEACHING EXPERIENCE

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<b>Teaching Assistant of Lab. of Mechanics and Thermodynamics.</b> <i>Developing experimental projects with bachelor students in Physics.</i>	Univ. of Calabria, Italy <i>Spring 2022</i>
<b>Teaching Assistant of Scientific Data Acquisition and Processing.</b> <i>Developing experimental projects with master students in Physics.</i>	Univ. of Calabria, Italy <i>Fall 2021 and 2022</i>
<b>Instructor of Macroscopic Quantum Analogs.</b> <i>PhD students in Physical, Chemical, Materials Sciences and Technologies.</i>	Univ. of Calabria, Italy <i>Summer 2021, Fall 2022</i>
<b>Assistant Instructor of Electricity and Magnetism.</b> <i>Bachelors in Electronic Engineering.</i>	Univ. of Calabria, Italy <i>Spring 2021</i>
<b>Assistant Instructor of Fluid Mechanics.</b> <i>Master in Fundamental Physics.</i>	Univ. of Rennes 1, France <i>Fall 2019 and 2020</i>
<b>Instructor of Fluid Mechanics.</b> <i>Master in Fundamental Physics.</i>	Univ. of Rennes 1, France <i>Fall 2018</i>
<b>Teaching Assistant (Instructor) of Differential Equations.</b> <i>1st year bachelor level. Overall rating: 6.2/7.</i>	MIT, USA <i>Spring 2017</i>
<b>Assistant Instructor of Quantum Mechanics and General Physics.</b> <i>Bachelors in Materials Science and Architectural Engineering.</i>	Univ. of Calabria, Italy <i>2012–2013</i>
<b>Assistant Instructor of Physics and Mathematics.</b> <i>Bachelors in Physics, Chemistry and Life Sciences.</i>	Univ. of Paris VII, France <i>2008–2011</i>

## TEACHING QUALIFICATIONS

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<b>French Qualification for Assistant Professor.</b> <i>Maître de conférences.</i>	France <i>2017</i>
<b>Italian Qualification for teaching in high schools.</b> <i>Active Formative Apprenticeship, for teaching Mathematics and Physics. Score 99/100.</i>	Italy <i>2015</i>

- Apprenticeship in a high school.
- Attended classes on the teaching of Mathematics and Physics, Pedagogy and didactics for inclusion, Didactical techniques for inclusion, History of Pedagogy, Theory and Methods of evaluation.

## SUPERVISION

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### Post-docs

**Benjamin Reichert** Institute of Physics of Rennes, France  
*Post-doc within the program CNRS-Momentum.* *2018–2020*

- Thermal active drops and Faraday instability in a rotating liquid.

### PhD students

**Wilson Reino** CNR-Nanotec, Italy  
*Joint supervision with Prof. R. Barberi, Univ. of Calabria, Italy* *Jan. 2022 - Dec. 2024*

- Capillary surfers.

## Master students

### **Capucine Eudes**

*Master student, École Nationale d'Ingénieurs de Brest, France.*

CNR-Nanotec, Italy

*Mar–July 2022*

- Wave field of capillary surfers.

### **Antoine Bellaigue**

*Master student in Physics, University of Rennes 1, France.*

Institute of Physics of Rennes, France

*May–July 2020*

- Numerical simulations of a classical wave-particle duality interacting with single and double slits.

### **Jérémy Archer**

*Master student in Physics, University of Rennes 1, France.*

Institute of Physics of Rennes, France

*May–July 2020*

- Surface reconstruction of Faraday instability patterns.

### **Paul Remigereau**

*Master student in Physics, University of Rennes 1, France.*

Institute of Physics of Rennes, France

*May–July 2019*

- Faraday instability in a rotating fluid.

## Bachelor students

### **Alessia Cirimele**

*Bachelor student, University of Calabria, Italy.*

CNR-Nanotec, Italy

*Apr–July 2022*

- Diffraction with a pilot-wave model.

### **Co-supervisor of Pierluigi Bilotto and Giuseppe Di Nardo**

*Bachelor students, final internship.*

University of Calabria, Italy

*2014*

- Walking droplets interacting with a single slit.
- Analogies between the De Broglie-Bohm pilot-wave theory and walking droplets.

## MENTORING

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### **Francesco Conidi, Andrea De Luca, Alessandra Mercuri and Davide Meringolo**

*Master students in Physics, University of Calabria, Italy*

CNR-Nanotec, Italy

*Feb. 2022 – present*

- The spinning of an Euler disk.

### **Sara Careaga**

*Master students in Physics, University of Calabria, Italy*

CNR-Nanotec, Italy

*Feb. 2022 – present*

- Detection of an acoustic source in two dimensions.

### **Paul Massiot**

*Master student in Physics, University of Rennes 1, France*

Institute of Physics of Rennes, France

*Sep. 2019 – Jan. 2020*

- Technique for the reconstruction of a perturbed fluid surface.

### **Ian Ho**

*Bachelor student.*

Brown University, USA

*Jan.–July 2018*

- Centimetric objects sliding on water and their mutual interaction due to capillary forces.

### **Roy Glavanitz**

*Bachelor student from Munich University of the Federal Armed Force.*

Brown University, USA

*May–July 2018*

- Design and implementation of a swimmer at intermediate Reynolds number.

**Alexis Goujon**

*Master student from Ecole Polytechnique.*

MIT, USA

*Spring 2017*

- Spin lattices of walking droplets.

**Jean-Baptiste Moiroud**

*Master student from Ecole Polytechnique.*

MIT, USA

*Spring 2017*

- Walking drops in double and triple cavities. Tunneling of walking drops.

**Crystal Owen, Andrew M. Fiore and Filip Twarowski**

*Ph.D. and master students, for projects of the course Interfacial Phenomena.*

MIT, USA

*Spring 2016*

- Vibration of soap bubbles.
- Non-linear phenomena in a liquid-on-liquid wetting system.
- Faraday-wave propelled boat.

**Benjamin Aubin**

*Master student from Ecole Polytechnique.*

MIT, USA

*Apr.–July 2016*

- Refraction of walking droplets.

**Clément Fontaine**

*Bachelor student.*

University of Paris VII

*May 2010*

- Faraday instability in a rotating fluid.

## ORGANIZATION OF MEETINGS

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### International

**Co-organizer of the meeting Hydrodynamic Quantum Analogs 8** Brown University, USA  
*July 2018*

- About 30 participants from: MIT, University of Liège, IMPA (Rio de Janeiro), New Jersey Institute of Technology, National Autonomous University of Mexico, University of Bath (UK), California Polytechnic State University, Monash University (Australia) and Brown University.

**Co-organizer of the meeting Hydrodynamic Quantum Analogs 5** Calabria, Italy  
*July 2015*

- About 25 participants from: MIT, University of Liège, IMPA (Rio de Janeiro), KAUST (Saudi Arabia), New York University, Max Planck Institute for Dynamics and Self-organization (Göttingen), University of Bath (UK) and University of Calabria.

### Local

**Co-organizer of a joint Workshop in Physics** Univ. of Calabria, Italy  
*Dec. 2022*

- Joint Workshop in Physics between the Department of Physics of the University of Calabria and the local section of the Institute of Nanotechnology of the National Research Council of Italy.  
6 speakers and more than 30 participants from both institutions.

## ACADEMIC SERVICE

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**Invited member of Ph.D. defense committee.** Paris Sciences et Lettres University, France  
*Defense by Federigo Ceraudo.* Dec. 2022

- Title of the thesis: “Topological insulators and artificial crystals for Hydro-Elastic Waves”.

**Member of Academic Board.** Univ. of Calabria, Italy  
*Doctoral School in Physical, Chemical and Materials Sciences and Technologies.* 2022–present

**Elected representative of Ph.D. students.** University of Paris VII, France  
*Doctorate School “Condensed Matter and Interfaces”.* 2009–2011

**Elected representative of Physics students.** Univ. of Calabria, Italy  
*Laurea Course Council, addressing organization of classes and course work.* 2006–2008

## OUTREACH

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**Seminar and visit at Liceo ‘Pizi’ (high school).** Palmi, Italy  
*Invited by Prof. Sergio Polito to a one-day visit to the high school.* Apr. 2022

- Included seminar with title “Analogie quantistiche in fenomeni macroscopici” (Quantum analogs in macroscopic phenomena) and assistance to students performing experiments in physics.

**Organizer of a stand for a Science Festival.** Rennes, France  
*Stand of the Soft Matter Department of the Institute of Physics of Rennes.* Oct. 2020

**Guide of high school students during the Science Week.** University of Paris VII, France  
*One-day visit of students from Lycée Charles de Foucault of Paris.* Oct. 2010

**Guide of University students.** University of Paris VII, France  
*One-day visit of the Physics Students Association of Perugia, Italy.* Nov. 2010

- Includes a meeting with Prof. Atef Asnacios.



## SEMINARS

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*Non-exhaustive list.*

- Wave-driven particles at a fluid interface** Rome, Italy  
*Department of Physics of La Sapienza and CNR - Institute for Complex Systems.* Sep. 2021
- Wave-driven particles at a fluid interface** Padua, Italy  
*Department of Physics, University of Padua.* Sep. 2021
- Capillary surfers** Paris, France (virtual)  
*Laboratoire Gulliver - ESPCI.* May 2021
- Hydrodynamic spin lattices** Italy (virtual)  
*Joint GSSI - Sapienza Webinars on Statistical Mechanics.* May 2021
- Water sliders, capillary attraction and capillary surfers** Paris, France (virtual)  
*Laboratoire Matière et Systèmes Complexes.* Feb. 2021
- Capillary surfers: Self-propelling particles at an oscillating fluid interface** Providence (RI), USA (virtual)  
*Fluids at Brown and Fluids and Thermal Sciences Joint Seminar Series.* Apr. 2020
- Hydrodynamic analogs on a vibrating bath** Poitier, France  
*Pprime Institute.* Feb. 2019
- Soap bubbles, walking drops and sliders at fluid interfaces** Marseille, France  
*Laboratories IRPHE and IUSTI, University of Aix-Marseille.* Oct. 2018
- Drops, sliders and bubbles at the liquid surface** Rennes, France  
*Rennes School on Complex Systems.* Oct. 2018
- Soap bubbles, walking drops and sliders at fluid interfaces** Orsay, France  
*Laboratories FAST and LIMSIS, University of Paris-Sud.* Sep. 2018
- Three experiments with drops and bubbles on fluid interfaces** Providence (RI), USA  
*School of Engineering at Brown University.* Nov. 2017
- Walking droplets interacting with boundaries** Lyon, France  
*Institute of Light and Matter, University Claude Bernard Lyon 1.* Oct. 2017
- Hydrodynamic analogs** Boston (MA), USA  
*Department of Physics at the University of Massachusetts, Boston.* Apr. 2017
- Walking droplets interacting with submerged boundaries** Rennes, France  
*Institute of Physics of Rennes, University of Rennes 1.* Dec. 2016
- Three experiments with drops and bubbles on fluid interfaces** Rome, Italy  
*Marine Technology Research Institute (INSEAN).* May 2015
- Faraday instability in deformable domains** Cambridge (MA), USA  
*Physical Mathematics group, Dept. of Mathematics, Massachusetts Institute of Technology.* Feb. 2014
- The Faraday instability in deformable domains** Paris, France  
*Jean le Rond d'Alembert Institute, University Pierre et Marie Curie (UPMC).* Jan. 2012

## INVITED CONFERENCE PRESENTATIONS

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- Capillary disks: sliding friction, capillary attraction and wave-driven propulsion** Paris, France  
*\* Selected for long talk at Rencontre du Non-Linéaire (RNL), then meeting canceled.* 2020
- Spin lattices of walking droplets.** Nice, France  
*Conference Waves Côte d'Azur.* Jun. 2019
- Diffraction and interference of walking droplets** Sevilla, Spain  
*European Fluid Mechanics Conference.* Sep. 2016

## OTHER CONFERENCE PRESENTATIONS

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*Non-exhaustive list.*

- Exploring diffraction of wave-driven particles.** Milan, Italy  
*Meeting of the Italian Physical Society.* Sep. 2022
- Macroscopic quantum analogs** Tropea, Italy  
*Fifteenth Biennial Quantum Structure 2022 Conference.* Jun. 2022
- Emergent order in hydrodynamic spin lattices** (online)  
*\*Selected for the workshop of the Institute of Nanotechnology of CNR.* Nov. 2021
- Forces on capillary disks** (online)  
*International Conference of Theoretical and Applied Mechanics* Aug. 2021
- Exploring diffraction with a pilot-wave model** (online)  
*March Meeting of the American Physical Society.* Mar. 2021
- Capillary surfers: self-propelling particles at an oscillating fluid interface** (online)  
*Meeting of the Italian Physical Society.* Sep. 2020
- Exploring diffraction with a pilot-wave model** Chicago (IL), USA (online)  
*Meeting of the Division of Fluid Dynamics of the American Physical Society.* Nov. 2020
- Capillary surfers: Self-propelling particles at an oscillating fluid interface** Seattle (WA)  
*Meeting of the Division of Fluid Dynamics of the American Physical Society.* Nov. 2019
- Friction on water sliders** Vienna, Austria  
*European Fluid Mechanics Conference* Sep. 2018
- Spin lattices of walking droplets** Grenoble, France  
*Condensed Matter Days, French Physical Society.* Aug. 2018
- Partial coalescence of a soap bubble with a soap film** Los Angeles (CA), USA  
*March Meeting of the American Physical Society.* March 2018
- Droplets bouncing on a standing wave field** Denver (CO), USA  
*Meeting of the Division of Fluid Dynamics of the American Physical Society.* Nov. 2017
- Walking drops interacting with submerged boundaries** Mexico City, Mexico  
*Workshop "Waves and particles, novel insights".* May 2017
- Diffraction and interference of walking droplets** Portland (OR), USA  
*Meeting of the Division of Fluid Dynamics of the American Physical Society.* Nov. 2016

<b>Walking droplets interacting with planar boundaries</b> <i>Meeting of the Division of Fluid Dynamics of the American Physical Society.</i>	Boston (MA), USA Nov. 2015
<b>Faraday instability in deformable domains</b> <i>Meeting of the Division of Fluid Dynamics of the American Physical Society.</i>	San Francisco (CA), USA Nov. 2014
<b>Order reconstruction in turbulent nematics</b> <i>Meeting of the Italian Liquid Crystal Society.</i>	Ravenna, Italy 2014
<b>Faraday instability in deformable domains</b> <i>Meeting of the Italian Physical Society.</i>	Naples, Italy 2012
<b>Turbulence induces change of topology in calamitic nematics</b> <i>Meeting of the Italian Liquid Crystal Society.</i>	Rome, Italy 2012
<b>Mutual adaptation of a Faraday instability pattern with its flexible boundaries</b> <i>Fluid - DTU Summer School.</i>	Denmark 2011
<b>The interplay of an instability pattern with its flexible boundaries</b> <i>Conference "On growth and forms" in honour of Prof. Yves Couder.</i>	Agay, France 2010
<b>Faraday instability in deformable domains</b> <i>Fluid - DTU Summer School</i>	Denmark 2009
<b>Force measurements at nanoscale by an atomic force microscope</b> <i>Summer course of Scuola Normale Superiore.</i>	Cortona, Italy 2006

- [1] I. Ho\*, **G. Pucci\***, A. U. Oza and D. M. Harris. Capillary surfers: wave-driven particles at a fluid interface. *Submitted to Physical Review Letters*. arXiv:2102.11694v2 (2021). \*Co-first author.

PUBLICATIONS

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- [1] **G. Pucci**. An introduction to hydrodynamic spin lattices. *Il Nuovo Cim.*, **45 C**, 73 (2022).
- [2] B. Reichert, J.-B. Le Cam, A. Saint-Jalmes and **G. Pucci**. Self-propulsion of a volatile drop on the surface of an immiscible liquid bath. *Phys. Rev. Lett.* **127**, 144501 (2021).
- [3] P. J. Sáenz, **G. Pucci**, S. E. Turton, A. Goujon, R. R. Rosales, J. Dunkel and J. W. M. Bush. Emergent order in hydrodynamic spin lattices. *Nature* **596**, 58-62 (2021).
- [4] L. Barnes, **G. Pucci**, and A. U. Oza. Resonant interactions in bouncing droplet chains. *Comptes Rendus Mécanique* **348** (6-7), 573-589 (2020).
- [5] I. Ho, **G. Pucci**, and D. M. Harris. Direct measurement of capillary attraction between floating disks. *Phys. Rev. Lett.* **123**, 254502 (2019). Featured in Physics and Editors' suggestion.
- [6] **G. Pucci**, I. Ho and D. M. Harris. Friction on water sliders. *Sci. Rep.* **9**, 4095 (2019).
- [7] **G. Pucci**, F. Carbone, G. Lombardo, C. Versace, R. Barberi. Topologically non-equivalent textures generated by the nematic electrohydrodynamics. *Liq. Cryst.* **46** (4), 649-654 (2019).
- [8] P. J. Sáenz, **G. Pucci**, A. Gujon, T. Cristea-Platon, J. Dunkel and J. W. M. Bush. Spin lattices of walking droplets. *Phys. Rev. Fluids* **3**, 100508 (2018); winning entry to the Gallery of Fluid Motion of the American Physical Society.
- [9] **G. Pucci**, D.M. Harris, L. Faria and J. W. M. Bush. Walking droplets interacting with single and double slits. *J. Fluid Mech.* **835**, 1136-1156 (2018).
- [10] N. Sungar, L. Tambasco, **G. Pucci**, P. J. Saenz and J. W. M. Bush. Hydrodynamic analog of particle trapping with the Talbot effect. *Phys. Rev. Fluids* **2**, 103602 (2017).
- [11] D. M. Harris, **G. Pucci**, V. Prost, J. Quintela and J. W. M. Bush. The merger of a bubble and a soap film, *Phys. Rev. Fluids* **1** (5), 050505 (2016); Milton Van Dyke Award of the Gallery of Fluid Motion of the American Physical Society.
- [12] **G. Pucci**, P. J. Saenz, L. M. Faria and J. W. M. Bush. Non-specular reflection of walking droplets, *J. Fluid Mech.* **804**, R3 (2016).
- [13] **G. Pucci**, D. Lysenko, C. Provenzano, Yu. Reznikov, G. Cipparrone and R. Barberi. Patterns of electro-convection in planar-periodic nematic cells. *Liq. Cryst.* **43** (2), 216-221 (2016).
- [14] M. Lombardo, N. Micali, V. Villari, S. Serrao, **G. Pucci**, R. Barberi, G. Lombardo. Ultraviolet A: Visible spectral absorbance of the human cornea after transepithelial soaking with dextran-enriched and dextran-free riboflavin 0.1% ophthalmic solutions. *J. Cataract Refract. Surg.* **41** (10), 2283 - 2290 (2015).
- [15] **G. Pucci**, M. Ben Amar and Y. Couder. Faraday instability in floating drops. *Phys. Fluids.* **27**, 091107 (2015); Milton Van Dyke Award of the Gallery of Fluid Motion of the American Physical Society.
- [16] **G. Pucci**, D. M. Harris and J. W. M. Bush. Partial coalescence of soap bubbles. *Phys. Fluids.* **27**, 061704 (2015).

- [17] **G. Pucci**, F. Carbone, C. Vena, G. Lombardo, C. Versace and R. Barberi. DSM1-DSM2 Transition Threshold in Turbulent Nematic Mixtures. *Mol. Cryst. Liq. Cryst.* **614**(1), 100-105 (2015).
- [18] M. P. De Santo, G. Petriashvili, R. Gary, **G. Pucci**, R. Barberi. Anti-counterfeiting and identification solutions using soft matter. *Rend. Fis. Acc. Lincei* **26** (2), S255-S259 (2015).
- [19] **G. Pucci**. Faraday instability in floating drops out of equilibrium: motion and self-propulsion from wave radiation stress. *Int. J. Non Linear Mech.* **75**, 107-114 (2015).
- [20] M. Lombardo, **G. Pucci**, R. Barberi, G. Lombardo. Interaction of ultraviolet light with the cornea: Clinical implications for corneal crosslinking. *J. Cataract Refract. Surg.* **41**(2), 446-459 (2015).
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