

# Guillaume Riboux

email: [griboux@us.es](mailto:griboux@us.es)

ORCID: [0000-0003-2395-1653](https://orcid.org/0000-0003-2395-1653) (Scopus ID: 24169171000) (Researcher ID: L-4909-2014)

## Current Position

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From 2019 **Profesor Titular de Universidad** equivalent Associate Professor of Fluid Mechanics (Senior Lecturer) at the Department of Aerospace Engineering and Fluid Mechanics at the Engineering Superior School of Seville (ETSI), Spain.

## Areas of Specialization

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Fluid Mechanics, Drop impact, Bubbly Flows, ElectroHydroDynamics.

## Appointments Held

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- 2018-2019 **Profesor Contratado Doctor** equivalent Associate Professor of Fluid Mechanics (Lecturer) at the Department of Aerospace Engineering and Fluid Mechanics at the Engineering Superior School of Seville (ETSI), Spain.
- 2016–2018 **Profesor Contratado Doctor Interino** equivalent Temporary Associate Professor of Fluid Mechanics (Temporary Lecturer) at the Department of Aerospace Engineering and Fluid Mechanics at the Engineering Superior School of Seville (ETSI), Spain.
- 2012–2016 **Profesor Ayudante Doctor** equivalent Assistant Professor of Fluid Mechanics at the Department of Aerospace Engineering and Fluid Mechanics at the Engineering Superior School of Seville (ETSI), Spain.
- 2010–2011 **Profesor Ayudante Doctor Interino** equivalent Temporary Assistant Professor of Fluid Mechanics at the Department of Aerospace Engineering and Fluid Mechanics at the Engineering Superior School of Seville (ETSI), Spain.
- 2008-2010 **Postdoctoral Research Associate** in the Department of Aerospace Engineering and Fluid Mechanics at the Engineering superior school of Sevilla (ETSI), Spain.
- 2006-2007 **Assistant Professor** (ATER) at the Toulouse University (UPS) and researcher at the Institute of Fluid Mechanics of Toulouse (IMFT UMR 5502), France.

## Education

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- 2007 **PhD** in Fluid Mechanics, Institut National Polytechnique of Toulouse. Laboratory of research: IMFT UMR 5502. Title: “Hydrodynamics in a swarm of rising bubbles”. Advisors: Frédéric Risso & Dominique Legendre.
- 2003 **MSc** in Energetic and heat transfer, Institut National des Sciences Appliquées de Toulouse (INSA - Doctoral School TyFep), France.
- 2002 **Physics “Maîtrise”** of the Paul-Sabatier University (UPS), Toulouse, France. Specialization: Meteorology, Oceanography, Heat transfer and Fluid Mechanics.
- 2001 **Physics “Licence”** of the Paul-Sabatier University (UPS), Toulouse, France. Specialization: Meteorology.
- 2000 **General Degree (DEUG)** Matematics, Informatic and Apllied Science (MIAS), Henri-Poincaré University (UHP), Nancy, France. Specialization: Physics.

## Grants, Honors & Awards

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- 2008 **Léopold Escande Thesis Prize**, Institut National Polytechnique of Toulouse.
- 2008 **Théodore Ozenne Thesis Prize**, Science Academy of Toulouse.

## Projects & Helps

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- From 2021 **Project PID2020-115655GB-C21**. *Complex interfacial flows with applications to coatings, interfacial rheology, microemulsions, hydrogen generation, cavity implosions and drop impact on liquid films*. Advisors: José Manuel Gordillo Arias & **G. Riboux**. Financiación: Ministerio de Ciencia, e Innovación.
- 2018–2021 **Project DPI2017-88201-C3-1-R**. *Dinámica de Interfases Complejas con Aplicaciones al Medio Ambiente, la Generación de Energía y Nuevos Materiales* (Co-Director). Advisors: José Manuel Gordillo Arias & **G. Riboux**. Financiación: Ministerio de Ciencia, e Innovación.
- 2014–2018 **Project DPI2014-59292-C02**. *Generación de gotas y burbujas: Análisis de su dinámica colectiva en procesos naturales e ingenieriles con aplicaciones industriales y medioambientales II* (Collaborator). Advisor: José Manuel Gordillo Arias. Financiación: Ministerio de Ciencia, e Innovación.
- 2012–2015 **Project DPI2011-28356-C03-01** *Mecanismos de generación de microgotas, burbujas y espumas con aplicaciones en procesos industriales, farmacología y medicina*. (Researcher). Advisor: José Manuel Gordillo Arias. Financiación: Ministerio de Ciencia, e Innovación.
- 2011–2013 **Project DPI2010-20450-C03-02**. *Aspectos Fundamentales de la Operación de Electrosprays. Aplicaciones en la Producción de Nanopartículas y Nanoemulsiones*. (Researcher). Advisor: Miguel Pérez-Saborid Sánchez-Pastor. Financiación: Ministerio de Ciencia e Innovación.
- 2009–2013 **Proyecto P08-TEP-03997**. *Síntesis de Partículas de Estructura Compleja, Nanofibras, Microemulsiones y Microespumas mediante las Técnicas de Electrospray Compuesto, Electrospinning y Coflujo Viscoso de Corrientes Coaxiales*. (Researcher). Advisor: José Manuel Gordillo Arias. Financiación: Junta de Andalucía (Consejería de Innovación, Ciencia y Empresa).
- 2006–2009 **Project 2006/TEP-103**. *Ayuda a la Consolidación del Grupo de Investigación* (Research contract). Advisor: Antonio Barrero Ripoll. Financiación: Junta de Andalucía (Plan Andaluz de Investigación).

2006–2009 **Project EXC/2005/TEP-985.** *Chorros coaxiales electrificados. Aplicaciones en nanotecnología* (Researcher). Advisor: Antonio Barrero Ripoll. Financiación: Junta de Andalucía (Plan Andaluz de Investigación).

## Thesis, Master Thesis and Project Advisor

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### Thesis

- From 2019 Paula García “Experimentos y teoría del impacto de gota en superficie inclinada”. Advisors: J. M. Gordillo & **G. Riboux**
- 2019 Enrique Sánchez Quintero, “Fragmentación de corrientes gaseosas y de masas líquidas en flujos naturales y de interés tecnológico”. Advisors: J. M. Gordillo & **G. Riboux**

### Projects, student internship

- 2021 María José Soriano Parrilla. “Estudio teórico y numérico del flujo bidimensional en el entorno de dos cilindros a alto número de Reynolds”. Advisor: **G. Riboux**.
- 2018 Marta Rallo Ayerbe, “Determinación de la permeabilidad de distintos medios porosos”. Advisor: **G. Riboux**.
- 2016 Javier Aznar Fernández, “Estudio aerodinámico de un ala recta que incorpora winglets”. Advisors: **G. Riboux** & J.-M. Gordillo.
- 2016 Alejandro Zurita Van Dinter, “Descripción Experimental del Impacto de Gotas sobre una Capa Líquida de Altura Variable”. Advisor: **G. Riboux**.
- 2015 Anabel López Pujazón, “Cálculo de la sustentación en alas en flecha fluctuantes con aplicaciones aerolásticas”. Advisors: J.-M. Gordillo & **G. Riboux**.
- 2015 Pedro Remesal Nogales, “Método numérico basado en el potencial de velocidades para la resolución de problemas linealizados no estacionarios”. Advisors: J.-M. Gordillo & **G. Riboux**.
- 2015 Daniel García Teba, “Estudio aerodinámico de una esfera y una cápsula utilizando métodos experimentales y computacionales”. Advisors: J. Fernández García & **G. Riboux**.
- 2015 Pablo Manuel Martín Rojas, “Reducción de resistencia aerodinámica en cuerpos romos mediante el uso de generadores de vórtices”. Advisors: **G. Riboux** & J.-M. Gordillo.
- 2015 Jorge Márquez Acedo, “Medida de las fuerzas aerodinámicas sobre un modelo de colector solar”. Advisors: J.-M. Gordillo & **G. Riboux**.
- 2013 Juan José Sánchez Rico, “Determinación de los coeficientes de sustentación y resistencia de un ala mediante métodos indirectos”. Advisors: **G. Riboux** & J. Fernández García.
- 2011 Nicolas Avisse, “Estudio experimental del impacto de una gota sobre una superficie líquida”. Advisor: **G. Riboux**.
- 2009 Sébastien Magnabal, “Estudio de la inestabilidad de un micro-chorro electrificado”. Advisor: **G. Riboux**.

## Research Activities

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- From 2013 **Research in impact of drops**, Departamento de Ingeniería Aeroespacial y Mecánica de Fluidos at Escuela Técnica Superior de Ingenieros de Sevilla, Spain.
- 2019 **Collaboration during 1 month** with Pr. Tagawa’s group at the Tokyo University of Agriculture y Tecnología on impact of micro-droplets at large impact velocity.

- 2014 **Measurement carried out** for Pr. Javier Dávila in the project ARIDLAP – “Medidas de distribución de presiones de un modelo a escala de una valla.” Autores: **G. Riboux** & Juan Fernández.
- 2008-2010 **Post-doctoral research in micro-fluidic**, Department of Aerospace Engineering and Fluid Mechanics at the Engineering superior school of Sevilla (ESI), Spain. Advisor: Antonio Barro.
- 2003-2007 **PhD thesis in Fluid Mechanics**, IMFT - Institute of Fluid Mechanics of Toulouse UMR 5502, Interface group, France. Advisors: Frédéric Risso & Dominique Legendre.
- 2004 **2 months Collaboration** with an Australian researcher at CSIRO during the PhD thesis, Institute of Fluid Mechanics of Toulouse UMR 5502, Interface group, France. “Sound generation on bubble coalescence following detachment”, Advisors: Richard Manasseh & Frédéric Risso.
- 2003 **6 months Master internship**, Institute of Fluid Mechanics of Toulouse UMR 5502, Interface group, France, “Experimental study of the vapour bubble growth and detachment at the wall of shear flow”, Advisors: Catherine Colin & Géraldine Duhar.
- 2002 **2 months, Master internship**, in the Laboratory of space Geophysics and oceanography LEGOS UMR 5566, Observatoire Midi-Pyrénées, Toulouse, France. “Salinity fluctuations in the equatorial Pacific Ocean due to the El-Niño phenomena”, Advisors: Christophe Maes.

## Books

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- 2017 José Manuel Gordillo Arias de Saavedra, **Guillaume Riboux Acher** & Juan Manuel Fernandez García. “Introducción a la mecánica de fluidos”, *Paraninfo* (<http://www.paraninfo.es>), ISBN: 9788428339735.
- 2012 José Manuel Gordillo Arias de Saavedra & **Guillaume Riboux Acher**. “Introducción a la aerodinámica potencial”, *Paraninfo* (<http://www.paraninfo.es>), ISBN: 9788497329941.

## Reviewer Activity

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- 2018 **Referee of National Research Project** of the “Netherlands Organisation for Scientific Research”.
- 2017 **G. Riboux**. “Award of Outstanding Contribution in Reviewing in International Journal of Multiphase Flow”, *International Journal of Multiphase Flow*.
- From 2009 *Referee works*, in the journals with Impact Factor (IF) from Web of Science de 2017
- *Physical Review Letters* (<https://journals.aps.org/prl/>, IF = 8.839).
  - *Physical Review Fluids* (<https://journals.aps.org/prl/>, IF = 2.021).
  - *Physical Review Applied* (<https://journals.aps.org/prl/>, IF = 4.782).
  - *Physical Review E* (<https://journals.aps.org/pre/>, IF = 2.284).
  - *Chemical Engineering Science* (<http://www.journals.elsevier.com/chemical-engineering-science/>, FI = 2.61).
  - *Journal of Fluid Mechanics* (<https://www.cambridge.org/core/journals/journal-of-fluid-mechanics>, IF = 2.893).

- *International Journal of Multiphase Flow* (<http://www.sciencedirect.com/science/journal/03019322>, IF = 1.94).
- *Microfluidics and Nanofluidics* (<http://www.springeronline.com/journal/10404>, IF = 2.592).
- *International Journal of Applied Mechanics* (<http://www.worldscinet.com/ijam/mkt/aimsscope.shtml>, IF = 1.954).

## Publications & Talks

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### Journal Articles

- 2022 P. García-Gejjo, **G. Riboux** & J. M. Gordillo . “Role of liquid viscosity and of air entrapped on the splashing of drops impacting over superhydrophobic substrates”, *Phys. Rev. Fluids*, **7**, 093606 -[article](#) -
- 2022 J. M. Gordillo & **G. Riboux**. “The initial impact of drops cushioned by an air or vapour layer with applications to the dynamic Leidenfrost regime”, *J. Fluid Mech.*, **941**, A10:1–19 -[article](#) -
- 2021 P. García-Gejjo, E. S. Quintero, **G. Riboux** & J. M. Gordillo . “Spreading and splashing of drops impacting rough substrates”, *J. Fluid Mech.*, **917**, A50:1–29 -[article](#) -
- 2021 M. Usawa, Y. Fujita, Y. Tagawa, **G. Riboux** & J. M. Gordillo. “Large impact velocities suppress the splashing of micron-sized droplets”, *Phys. Rev. Fluids*, **6**, 023605:1–10 -[article](#) -
- 2020 P. García-Gejjo, **G. Riboux** & J. M. Gordillo . “Inclined impact of drops”, *J. Fluid Mech.*, **897**, A12:1–46 -[article](#) -
- 2019 J. M. Gordillo & **G. Riboux**. “A note on the aerodynamic splashing of droplets”, *J. Fluid Mech.*, **871**, R3, 1–13 -[article](#) -
- 2019 E. S. Quintero, **G. Riboux** & J. M. Gordillo. “Splashing of droplets impacting superhydrophobic substrates”, *J. Fluid Mech.*, **870**, 175–188 - [article](#) -
- 2019 J. M. Gordillo, **G. Riboux** & E. S. Quintero. “A theory on the spreading of impacting droplets”, *J. Fluid Mech.*, **866**, 298–315 - [article](#) -
- 2017 **G. Riboux** & J. M. Gordillo. “Boundary-layer effects in droplet splashing”, *Phys. Rev. E*, **96**, 013105(1–8) - [article](#) -
- 2016 **G. Riboux** & J. M. Gordillo. “Maximum drop radius and critical Weber number for splashing in the dynamical Leidenfrost regime”, *J. Fluid Mech.*, **803**, 516–527 - [article](#) -
- 2016 F. Campo-Cortés, **G. Riboux** & J. M. Gordillo. “Contact line pinning favors the mass production of monodisperse microbubbles”, *Microfluid Nanofluid.*, **20**(1), 1–8 - [article](#) -
- 2015 H. J. J. Staat, T. Tran, B. Geerdink, **G. Riboux**, C. Sun, J. M. Gordillo & D. Lohse. “Phase diagram for droplet impact on superheated surfaces”, *J. Fluid Mech.*, **779**, R3, 1–12 - [article](#) - Portada del volumen **779** en la revista *J. Fluid Mech.*.
- 2015 **G. Riboux** & J. M. Gordillo. “The diameters and velocities of the droplets ejected after splashing”, *J. Fluid Mech.*, **772**, 630–648. - [article](#) -
- 2014 **G. Riboux** & J. M. Gordillo. “Experiments of drops impacting a smooth solid surface: a model of the critical impact speed for drop splashing”, *Phys. Rev Lett.*, **113**, 024507. - [article](#) - Editors’ suggestion and commentary in *Physics* by Philip Ball.
- 2013 **G. Riboux**, D. Legendre & F. Risso. “A model of bubble-induced turbulence based on large-scale wake interactions”, *J. Fluid Mech.*, **719**, 362–387. - [article](#) -
- 2011 **G. Riboux**, Á. G. Marín, I. G. Loscertales & A. Barrero. “Whipping instability characteriza-

- tion of an electrified visco-capillary jet”, *J. Fluid Mech.*, **671**, 226–253. - [article](#) -
- 2010 **G. Riboux**, F. Risso & D. Legendre. “Experimental characterization of the agitation generated by bubbles rising at high Reynolds number”, *J. Fluid Mech.*, **643**, 509-539. - [article](#) -
- 2009 G. Duhar, **G. Riboux** & C. Colin. “Vapour bubble growth and detachment at the wall of shear flow”, *Heat and Mass Transfer*, **45**, Special Issue No.7, 847-855. - [article](#) -
- 2008 F. Risso, V. Roig, Z. Amoura, **G. Riboux** & A-M Billet. “Wake attenuation in large Reynolds number dispersed two-phase flows”, *Phil. Trans. R. Soc. A*, **366**, 2177-2190. - [article](#) -
- 2008 R. Manasseh, **G. Riboux** & F. Risso. “Sound generation on bubble coalescence following detachment”, *Int. J. Multiphase Flow*. **34**, 938-949. - [article](#) -

### Congresses with Proceeding Publications and Orals

- 2010 R. Manasseh, A. Bui, P. Liovic, A. Ooi, **G. Riboux** & F. Risso. “Interfacial dynamics and frequencies of passive bubble-acoustic emissions”, 20<sup>th</sup> International Congress on Acoustics, ICA2010, Sydney, Australia, August 23 – 27.
- 2010 **G. Riboux**, Á. G. Marín, I. G. Loscertales & A. Barrero. “Experimental characterization of the whipping instability of charged jets issued in liquid baths”, 7<sup>th</sup> International Conference on Multiphase Flow, ICMF, Tampa, Florida, U.S.A., May 30 – June 4. - [article](#) -
- 2010 **G. Riboux**, F. Risso & D. Legendre. “Scaling laws for bubble-induced agitation at high Reynolds number”, 7<sup>th</sup> International Conference on Multiphase Flow, ICMF, Tampa, Florida, U.S.A., May 30 – June 4. - [article](#) -
- 2010 **G. Riboux**, Á. G. Marín, A. Barrero, A. Fernández-Nieves & I. G. Loscertales. “Experimental Characterization of the whipping instability of charged microjets in liquid baths”, Material Research Society Spring Meeting, San Francisco, U.S.A, April 6 – 8 - [article](#) -
- 2008 **G. Riboux**, Á. G. Marín, I. G. Loscertales & A. Barrero. “Non-axisymmetric instabilities in charged microjets in liquid-liquid electrosprays”, 1<sup>st</sup> European Conference on Microfluidics, Università di Bologna, Italy, December 10 – 12.
- 2007 R. Manasseh, **G. Riboux**, A. Bul & F. Risso. “Sound emission on bubble coalescence: imaging, acoustic and numerical experiments”, 16<sup>th</sup> Australasian Fluid Mechanics Conference, Crown Plaza, Gold Coast, Australia, December 2 – 7.
- 2007 **G. Riboux**, F. Risso & D. Legendre. “Liquid fluctuations generated by large-Reynolds-number rising bubbles”, 6<sup>th</sup> International Conference on Multiphase Flow, ICMF, Leipzig, Germany, July 9 – 13.
- 2005 **G. Riboux**, F. Risso & D. Legendre. “Fluctuations de la vitesse du liquide dans un nuage de bulles homogène”, 17<sup>ème</sup> Congrès Français de Mécanique CFM, Troyes, France, Septembre.
- 2004 G. Duhar, **G. Riboux** & C. Colin. “Vaporisation de bulle de n-pentane dans un écoulement cisailé”, SFT (2004), Congrès Français de Thermique, Presqu’île de Giens, France, 25–28 Mai.

### Congresses

- 2022 J. M. Gordillo & **G. Riboux**. “The initial impact of drops cushioned by an air or vapor layer: the dynamic Leidenfrost temperature”, 14<sup>th</sup> Euromech Fluid Mechanics Conference, Athens, Greece, September 13–16.
- 2022 P. García-Geijo, **G. Riboux** & J. M. Gordillo. “The role of friction on the splashing of drops impacting over superhydrophobic substrates”, 14<sup>th</sup> Euromech Fluid Mechanics Conference, Athens, Greece, September 13–16.
- 2022 J. M. Gordillo & **G. Riboux**. “The initial impact of drops cushioned by an air or vapor layer: the dynamic Leidenfrost temperature”, 1<sup>st</sup> Spanish Fluid Mechanics Conference (SFMC),

Cádiz, Spain, June 19–22 - Poster session -

- 2022 P. García-Geijo, **G. Riboux** & J. M. Gordillo. “The role of friction on the splashing of drops impacting over superhydrophobic substrates”, 1<sup>st</sup> Spanish Fluid Mechanics Conference (SFMC), Cádiz, Spain, June 19–22.
- 2021 **G. Riboux**, M. Usawa, Y. Fujita, Y. Tagawa & J. M. Gordillo. “High speeds micron-sized droplets impact onto smooth substrate”, 74<sup>th</sup> Annual DFD Meeting (APS), Phoenix, Arizona, USA, November 21–23.
- 2021 P. García-Geijo, E. S. Quintero, **G. Riboux** & J. M. Gordillo. “Splashing of drops impacting rough substrates”, 74<sup>th</sup> Annual DFD Meeting (APS), Phoenix, Arizona, USA, November 21–23.
- 2021 Y. Tagawa, M. Usawa, Y. Fujita, **G. Riboux** & J. M. Gordillo. “High speeds of impacting micron-sized droplets suppress the splashing”, 5<sup>th</sup> International Conference on Droplets, Darmstadt, Germany, August 16–18 (Virtual Meeting).
- 2021 P. García-Geijo, E. S. Quintero, **G. Riboux** & J. M. Gordillo. “Spreading and splashing of drops impacting rough substrates”, Special Interest Group on Drop Dynamics, University of Oxford/Wadham College, 29<sup>th</sup> June (Virtual Meeting).
- 2020 P. García-Geijo, **G. Riboux** & J. M. Gordillo. “Inclined impact of drops”, 73<sup>rd</sup> Annual DFD Meeting (APS), Chicago, Illinois, USA, November 22–24.
- 2019 **G. Riboux** & J. M. Gordillo. “Some additional considerations on the splashing of droplets”, 72<sup>nd</sup> Annual DFD Meeting (APS), Seattle, Washington, USA, November 23–26.
- 2019 J. M. Gordillo, **G. Riboux** & E. S. Quintero. “A theory on the spreading of droplets”, 72<sup>nd</sup> Annual DFD Meeting (APS), Seattle, Washington, USA, November 23–26.
- 2018 **G. Riboux**, E. S. Quintero & J. M. Gordillo. “Spreading and splashing of droplets impacting superhydrophobic substrates”, 71<sup>st</sup> Annual DFD Meeting (APS), Atlanta, Georgia, USA, November 18–20.
- 2018 E. S. Quintero, **G. Riboux** & J. M. Gordillo. “Drop impact onto a superhydrophobic substrate”, 12<sup>th</sup> Euromech Fluid Mechanics Conference, Vienna, Austria, September 09–13.
- 2018 **G. Riboux**, E. S. Quintero & J. M. Gordillo. “Dynamic of drop impact onto a superhydrophobic substrate”, Workshop on Fluid Mechanics, Universidad de Málaga, Málaga, Spain, July 23–24.
- 2017 **G. Riboux** & J. M. Gordillo. “Boundary-layer effects in droplet splashing”, 70<sup>th</sup> Annual DFD Meeting (APS), Denver, Colorado, USA, November 19–21.
- 2016 **G. Riboux** & J. M. Gordillo. “Maximum drop radius and critical Weber number for splashing in the dynamical Leidenfrost regime”, 11<sup>th</sup> Euromech Fluid Mechanics Conference, Sevilla, Spain, September 12–16.
- 2016 J. M. Gordillo & **G. Riboux**. “Drop splashing at smooth dry surfaces”, 11<sup>th</sup> Euromech Fluid Mechanics Conference, Sevilla, Spain, September 12–16.
- 2015 **G. Riboux** & J. M. Gordillo. “Maximum drop radius and critical Weber number for splashing in the dynamical Leidenfrost regime”, 68<sup>th</sup> Annual DFD Meeting (APS), Boston, Massachusetts, USA, November 22–24.
- 2015 J. M. Gordillo, F. Campo–Cortés & **G. Riboux**. “Contact line pinning favors the mass production of monodisperse microbubbles”, 68<sup>th</sup> Annual DFD Meeting (APS), Boston, Massachusetts, USA, November 22–24.
- 2014 **G. Riboux** & J. M. Gordillo. “To splash or not to splash? That is the question”, 67<sup>th</sup> Annual DFD Meeting (APS), San Francisco, California, USA, November 23–25.
- 2014 **G. Riboux** & J. M. Gordillo. “The critical impact speed for the splash of a drop”, 10<sup>th</sup> Euromech Fluid Mechanics Conference, Copenhagen, Denmark, September 14–18.
- 2013 **G. Riboux**, J. M. Gordillo & A. Korobkin. “Drop splash on a smooth, dry surface”, 66<sup>th</sup> An-

- nual DFD Meeting (APS), Pittsburgh, Pennsylvania, USA, November 24–26.
- 2013 J. M. Gordillo, **G. Riboux** & A. Korobkin. “Drop splash on a smooth, dry surface: Part II”, 66<sup>th</sup> Annual DFD Meeting (APS), Pittsburgh, Pennsylvania, USA, November 24–26.
- 2010 **G. Riboux**, Á. G. Marín, I. G. Loscertales & A. Barrero. “Electrospinning of a viscous-capillary jet within dielectric liquid bath”, 63<sup>rd</sup> Annual DFD Meeting (APS), Long Beach, California, U.S.A., November 21 – 23.
- 2010 **G. Riboux**, Á. G. Marín, I. G. Loscertales & A. Barrero. “Electrospinning of a viscous-capillary jet”, 3<sup>rd</sup> FeRMAT - IMPACT - GIMFus Meeting, Sevilla, Spain, October 20 – 22.
- 2008 **G. Riboux**, Á. G. Marín, I. G. Loscertales & A. Barrero. “Whipping charged jet instabilities within dielectric liquid baths”, 61<sup>st</sup> Annual DFD Meeting (APS), San Antonio, Texas, U.S.A., November 23 – 25.
- 2008 Á. G. Marín, **G. Riboux**, I. G. Loscertales & A. Barrero. “Whipping instabilities in electrified liquid jets”, 61<sup>st</sup> Annual DFD Meeting (APS), San Antonio, Texas, U.S.A., November 23 – 25. Submission of a video.
- 2008 F. Risso, V. Roig, Z. Amoura, **G. Riboux** & A.-M. Billet. “Wake attenuation in large Reynolds number dispersed two-phase flows”, 7<sup>th</sup> Euromech Fluid Mechanics Conference, Manchester, England, September 14 – 18.
- 2006 F. Risso, K. Ellingsen, **G. Riboux** and D. Legendre. “Statistical properties of bubble-induced turbulence”, CHISA, Prague, Czechoslovakia.
- 2005 F. Risso, **G. Riboux** & D. Legendre. “Liquid velocity fluctuations induced by large-Reynolds-number rising bubbles: experiments and numerical simulations”, EUROMECH colloquium Hydrodynamics of Bubbly flows, Leiden, Netherlands.
- 2004 F. Risso, **G. Riboux** & D. Legendre. “Liquid Velocity fluctuations induced by large-Reynolds-number rising bubbles”, IUTAM Symposium on Recent Advances in Disperse Multiphase Flow Simulation, Argonne, U.S.A.

### Invited Seminars

- 2022 J. M. Gordillo & **G. Riboux**. “The initial impact of drops cushioned by an air or vapour layer with applications to the dynamic Leidenfrost regime”, Universidad de Málaga, Málaga, España, 13 de Mayo.
- 2019 **G. Riboux** & J. M. Gordillo. “Drop splashing: Aerodynamic considerations”, Tokyo University of Agriculture and Technology, Tokyo, Japan, July 12.
- 2019 J. M. Gordillo & **G. Riboux**. “A theory on the spreading of impacting droplets”, Tokyo University of Agriculture and Technology, Tokyo, Japan, July 12.
- 2016 **G. Riboux** & J. M. Gordillo. “Drop splashing on smooth heated solid substrates”, *Workshop on Drop Impact: From coalescence to splash*, Imperial College of London, London, United Kingdom, November 11.
- 2016 J. M. Gordillo & **G. Riboux**. “Drop splashing at smooth dry surfaces”, *Workshop on Drop Impact: From coalescence to splash*, Imperial College of London, London, United Kingdom, November 11.
- 2015 **G. Riboux** & J. M. Gordillo. “El despegue aerodinámico explica la rotura de gotas al chocar contra superficies sólidas: criterio de splash, tamaños y velocidades de las microgotas eyectadas tras el impacto.”, Universidad de Cádiz, Cádiz, España, 22 de Mayo.
- 2014 **G. Riboux** & J. M. Gordillo. “The critical impact speed for the splash of a drop: part I”, Universidad Carlos III, Madrid, Spain, April 25.
- 2014 J. M. Gordillo & **G. Riboux**. “The critical impact speed for the splash of a drop: part II”, Universidad Carlos III, Madrid, Spain, April 25.



## Seminars

- 2019 **G. Riboux** & J. M. Gordillo. “Drop splashing: Temperature considerations”, Tokyo University of Agriculture and Technology, Tokyo, Japan, July 24.
- 2019 **G. Riboux** & J. M. Gordillo. “Drop splashing: Boundary layer considerations”, Tokyo University of Agriculture and Technology, Tokyo, Japan, July 11.
- 2019 P. García–Geijo, **G. Riboux** & J. M. Gordillo. “Drop spreading on an inclined substrate”, Workshop on Fluid Mechanics, Universidad de Granada, Granada, Spain, July 22–23.
- 2019 E. S. Quintero, **G. Riboux** & J. M. Gordillo. “Splashing of droplets impacting rough substrates”, Workshop on Fluid Mechanics, Universidad de Granada, Granada, Spain, July 22–23.
- 2018 J. M. Gordillo, **G. Riboux** & E. S. Quintero. “Analytical theory for droplet spreading”, Université de Liège, Liège, November 9<sup>th</sup>.
- 2018 **G. Riboux**, E. S. Quintero & J. M. Gordillo. “Dynamic of drop impact onto a superhydrophobic substrate”, Workshop on Fluid Mechanics, Universidad de Málaga, Málaga, Spain, July 23–24.
- 2017 **G. Riboux** & J. M. Gordillo. “The effect of the boundary layer growth on drop splashing”, Workshop on Fluid Mechanics, Universidad de Tarragona, Tarragona, Spain, July 20–21.
- 2017 J. M. Gordillo & **G. Riboux**. “Drop splashing at smooth dry surface”, BP Institute for Multiphase Flow, Cambridge, United Kingdom, May 25<sup>th</sup>.
- 2016 **G. Riboux** & J. M. Gordillo. “Prediction of the drop break-up after impact on a wall in the Leidenfrost regime”, Workshop on Fluid Mechanics, Universidad de Cádiz, Cádiz, Spain, July 21–22.
- 2015 **G. Riboux** & J. M. Gordillo. “Maximum drop radius and critical Weber number for splashing in the dynamical Leidenfrost regime”, Workshop on Fluid Mechanics, Universidad de Jaén, Jaén, Spain, July 28–29.
- 2015 F. Campo–Cortés, **G. Riboux** & J. M. Gordillo. “Contact line pinning favors the mass production of monodisperse microbubbles”, Workshop on Fluid Mechanics, Universidad de Jaén, Jaén, Spain, July 28–29.
- 2014 **G. Riboux** & J. M. Gordillo. “Aerodynamic take-off explains drop splashing”, Workshop on Fluid Mechanics, Universidad de Málaga, Málaga, Spain, June 26–27.
- 2013 **G. Riboux** & J. M. Gordillo. “Drop impact on a dry surface at moderate Weber numbers”, Workshop on Fluid Mechanics, Granada, Spain, July 15–16.
- 2012 **G. Riboux**, D. Legendre & F. Risso. “La doble naturaleza de la agitación inducida por un enjambre de burbujas revelado por simulaciones a larga escala”, GIMFus Seminar, Sevilla, Spain, December 4.
- 2012 **G. Riboux** & N. Avisse. “Formación de burbujas vía impacto de una gota sobre una superficie libre”, Workshop on Fluid Mechanics, Universidad de Sevilla, Sevilla, Spain, January 26–27.
- 2009 **G. Riboux**, Á. G. Marín, I. G. Loscertales & A. Barrero. “Whipping instabilities in charged microjets within liquid bath”, Yflow, Málaga, Spain, May.
- 2008 A. Barrero, **G. Riboux**, Á. G. Marín & I. G. Loscertales. “Whipping charged jet instabilities within dielectric liquid baths”, Georgia-Tech., Atlanta, U.S.A, December.
- 2008 **G. Riboux**, Á. G. Marín, I. G. Loscertales & A. Barrero. “Whipping charged jet instabilities within dielectric liquid baths”, Yflow, Málaga, España, November.
- 2008 **G. Riboux**, Á. G. Marín, I. G. Loscertales & A. Barrero. “Etude expérimentale du whipping d’un micro-jet électrifé”, Interface Group Seminar, IMFT, Toulouse, France, October.
- 2008 **G. Riboux**, F. Risso & D. Legendre. “Liquid agitation induced by large-Reynolds-number

rising bubbles”, Fluid Mechanics Department Seminar, ESI, Seville, Spain, February.

- 2005 **G. Riboux**, F. Risso & D. Legendre. “Fluctuations de vitesse du liquide dans un nuage de bulle en ascension: Etude expérimentale et numérique”, Interface seminar, IMFT, Toulouse, France, December.
- 2005 **G. Riboux**, F. Risso & D. Legendre. “Fluctuations de vitesse du liquide dans un essaim de bulle en ascension”, Young researchers seminar of the IMFT, Toulouse, France, June.

### Scientific Vulgarisation

- 2014 Commentary of the article by **G. Riboux** & J. M. Gordillo, *Phys. Rev Lett.*, **113**, in *Physics* by Philip Ball, “What Makes a Droplet Splash?”, Published July 11 | *Physics* 7, 73 | DOI 10.1103/Physics.7.73. - [article](#) -
- 2014 Article by Patricia Waldron, “Splashing Droplets can take off like airplanes” published 29, July 2014 | *Inside Science* about the paper “Experiments of drops impacting a smooth solid surface: model of the critical impact speed for drop”, *Phys. Rev Lett.*, **113**. - [article](#) -
- 2014 Article by Franziska Konitzer, “Wann ein Tropfen spritzt” published in *Welt der Physik*, July, 28 about the paper “Experiments of drops impacting a smooth solid surface: model of the critical impact speed for drop”, *Phys. Rev Lett.*, **113**. - [article](#) -
- 2014 Article “Drop impact” published in *Frontline*, July, 23 about the paper “Experiments of drops impacting a smooth solid surface: model of the critical impact speed for drop”, *Phys. Rev Lett.*, **113**. - [article](#) -
- 2014 Commentary of the article by **G. Riboux** & J. M. Gordillo, *Phys. Rev Lett.*, **113**, in Universidad de Sevilla’s communication “El despegue aerodinámico determina el ‘Splash’ de gotas, según expertos de la US”, July 17 - [article](#) -
- 2014 Commentary of the article by **G. Riboux** & J. M. Gordillo, *Phys. Rev Lett.*, **113**, in *SINC* “El gas circundante determina la evolución de las gotas al chocar”, July 15 - [article](#) -
- 2005 **G. Riboux**. Presentation and explication of the young researchers work to public, Science day (laboratories open to public), IMFT, October.

### Thesis tribunal member

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- 2022 Cyril Vettorello (Université de Toulouse): “Écoulements diphasiques gaz-liquide lors d’échanges gravitaires”. Director: Véronique Roig & Olivier Praud.
- 2016 Javier Rivero Rodríguez (Universidad de Sevilla): “Estudio numérico de modelos unidimensionales en la interacción fluido-estructura y en la dinámica de chorros y gotas electrificados”. Director: Miguel Pérez-Saborid Sánchez-Pastor.

### Thesis, substitut tribunal member:

- 2021 Alejandro Martínez Calvo (Universidad Carlos III de Madrid): “Dynamics of Complex Capillary Flows: Stability, Rupture, and Influence of Surfactants”. Director: Alejandro Sevilla Santiago.
- 2016 Paula Andrea Consoli Lizzi (Universidad Carlos III de Madrid): “Capillary breakup of stretched liquid jets”. Director: Alejandro Sevilla Santiago & Wilfried Coenen.
- 2015 José Carlos Cano Lozano (Universidad de Jaén): “Bubble Formation and rising dynamics analyses”. Director: Carlos Martínez Bazán.
- 2013 Miguel Ángel Parrales Borrero (Universidad de Sevilla): “Propagación y dispersión de on-

das acústicas a través de nubes de microburbujas”. Directores: Juan Fernández García & Miguel Pérez-Saborid Sánchez-Pastor.

- 2011 Elena De Castro Hernández (Universidad de Sevilla): “Analysis of the mechanisms of generation and breakup of bubbles and droplets in gas-liquid and liquid-liquid streams”. Director: José Manuel Gordillo Arias de Saavedra.

## Teaching

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2020–2021 **Associate Professor of Fluid Mechanics (Senior Lecturer – Profesor Titular de Universidad)** at the Escuela Técnica Superior de Ingenieros, Seville University (ETSI), Spain: 90 hours per year – Total: 120 horas.

- Fluid Mechanics (Licence II): Course: 50 hours. Advisor: J. Fernández García.
- Aerodynamics (Licence III): Course: 40 hours. Advisor: G. Riboux.

2019–2020 **Associate Professor of Fluid Mechanics (Senior Lecturer – Profesor Titular de Universidad)** at the Escuela Técnica Superior de Ingenieros, Seville University (ETSI), Spain: 135 hours per year – Total: 120 horas.

- Fluid Mechanics (Licence II): Course: 50 hours. Advisor: J. Fernández García.
- Aerodynamics (Licence III): Course: 40 hours – Numerical practice, panel method: Applications to NACA profile: 30 hours. Advisor: G. Riboux.

2016–2019 **Associate Professor of Fluid Mechanics (Lecturer – Profesor Contratado Doctor)** at the Escuela Técnica Superior de Ingenieros, Seville University (ETSI), Spain: 135 hours per year – Total: 405 horas.

- Fluid Mechanics (Licence II): Course: 50 hours – Experimental practice: 15 hours. Advisor: J. Fernández García.
- Aerodynamics (Licence III): Course: 40 hours – Numerical practice, panel method: Applications to NACA profile: 30 hours. Advisor: G. Riboux.

2013–2016 **Assistant professor** at the Escuela Técnica Superior de Ingenieros, Seville University (ETSI), Spain: 135 hours per year – Total: 405 horas.

- Fluid Mechanics (Licence II): Course: 50 hours – Experimental practice: 15 hours. Advisors: J. Fernández García.
- Aerodynamics (Licence III): Course: 40 hours – Numerical practice, panel method: Applications to NACA profile: 30 hours. Advisor from 2014: G. Riboux.

2012-2013 **Assistant professor** at the Escuela Técnica Superior de Ingenieros, Seville University (ETSI), Spain: 90 hours.

- Aerodynamics (Licence III): Course: 40 hours – Numerical practice, panel method: Applications to NACA profile: 50 hours. Advisors: J. M. Gordillo.

2011-2012 **Assistant professor** at the Escuela Técnica Superior de Ingenieros, Seville University (ETSI), Spain: 114 hours.

- (a) Fluid Mechanics - course (Licence III): 6 hours. Advisors: J. M. Gordillo.

(b) Aerodinamics (Licence III): 108 hours.

- Course: 56 hours.
- Numerical practice, panel method: Applications to NACA profile: 52 hours.

Advisors: J. M. Gordillo.

2011-2012 **Young professor formation** of the Seville University. One year of formation to learn to teach (a total of 100 hours).

2010-2011 **Assistant professor** at the Escuela Tecnica Superior de Ingenieros, Seville University (ETSI), Spain: 145 hours.

(a) Fluid Mechanics (Licence III): 90 h.

- Practice I: Viscometer - Tensiometer - Hydraulic jump - Viscosimetry determination by measure of falling sphere velocity.
- Practice II: Pressuring of a tank - Reynolds experiment: pipe flow.

Advisors: J. M. Gordillo & M. Zurita-Gotor.

(b) Aerodinamics (Licence III): 55 h. Numerical practice, panel method: Aplicacions to NACA profile. Advisors: J. M. Gordillo.

2006-2007 **Assistant professor** at the Toulouse University (UPS), France: 112 hours.

(a) Fluid Mechanics (Master I): 36 h. Blower by aspiration - Viscometry - Pelton turbine. Advisors: G. Bardan & S. Saintlos Brillac.

(b) Heat transfers (Licence III): 19.5 h. Conduction - Convection and radiation. Advisors: A. Giovannini & F. Moulin.

(c) Mecanics (Licence I): 32.5 h. Vectorial analyse - kinematic - dynamic. Work, power et energy - Friction. Movements composition - Problem of two bodies. Kepler problem - Dynamic of the earth. Advisors: P. Laurens & A. Muscat.

(d) Resistance of materials (Licence III): 24 h. Study of deformations in traction and inflection of a bar. Deformations of a prestressed bolt. Extensometric study of a thin cylinder. Advisor: G. Bardan.

2006 **Participation to the formation day of professors of the secondary level** at the IMFT, Toulouse, France. Presentation and explication of the research and works of a young researcher, March.

2003-2006 **Teaching performed during the PhD thesis** at the National Polytechnic Institute of Engineering in Electrotechnology, Electronics, Computer Science, Hydraulics and Telecommunications (ENSEEIH), Toulouse, France: 72 hours.

(a) Rational mechanics: 20 h.

(b) Project of rational mechanics: 28 h. Study of a pool: schock and displacement - Boat stabilisation. Advisors: V. Roig & W. Bergez.

(c) Heat transfers: 20 h. Determination of the sand diffusivity. Advisor: P. Crausse.

(d) Non-linear system: 4 h. Advisor: A. Sevrain.

## Evaluacion of the Teaching activity

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Student questionnaire about the teaching activity carried out by the profesor for the course of Aerodynamics I - licence III (3<sup>er</sup> curso del Grado en Ingeniería Aeroespacial) and the course of Fluid Mechanics - licence II (2<sup>o</sup> curso del Grado en Ingeniería de Tecnologías Industriales).

2020–2021	Aerodynamics I (4.85/5). Fluid Mechanics (4.55/5).
2019–2020	Aerodynamics I (4.36/5). Fluid Mechanics (3.27/5).
2018–2019	Aerodynamics I (4.65/5). Fluid Mechanics (4.06/5).
2017–2018	Aerodynamics I (4.65/5). Fluid Mechanics (3.93/5).
2016–2017	Aerodynamics I (4.44/5). Fluid Mechanics (3.63/5).
2015–2016	Aerodynamics I (4.31/5). Fluid Mechanics (3.10/5).
2014–2015	Aerodynamics I (4.02/5). Fluid Mechanics (3.70/5).
2013–2014	Aerodynamics I (4.20/5). Fluid Mechanics (3.20/5).
2012–2013	Aerodynamics I (4.50/5).
2011–2012	Aerodynamics I (4.25/5).

## Assistance to specialization courses

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2016	“Mindfulness, Estrés, Trabajo y Felicidad” – Dr. Andrés Pomares Alonso (12 hours).
2016	“Seguridad y prevención de riesgos laborales en laboratorios de Ingeniería” (3 horas).
2011–2012	<b>Formación de Profesores Noveles</b> de la Universidad de Sevilla, en el marco del I Plan Propio de Docencia (100 horas).

## Service to the Profession

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2016	<b>Member of the Organize Committee</b> of the 11 <sup>th</sup> Euromech Fluid Mechanics Conference, Sevilla, Spain, September 12–16.
2015	<b>Chairman</b> in session D31: “Drops: Leidenfrost Effects” del 68 <sup>th</sup> Annual DFD Meeting (APS), Boston, Massachusetts, USA, November 22–24.
2010	<b>Co-organisation</b> of the 3 <sup>rd</sup> FeRMAT - IMPACT - GIMFus Meeting, in Seville, Spain, October 20 – 22.
2010	<b>Setting up</b> the web site for the <a href="#">3<sup>rd</sup> FeRMAT - IMPACT - GIMFus Meeting</a> .
2010	<b>Chairman</b> of the session (IV: Bubbly flow II) in the 3 <sup>rd</sup> FeRMAT - IMPACT - GIMFus Meeting, Sevilla, España, Octubre 20 – 22.
2010	<b>Setting up</b> the web site of the Fluid Mechanics Group of Seville University: <a href="#">GIMFus</a> .
2010	<b>Chairman</b> of the “Micro and Nano-Scale Multiphase Flows” session (15.2) in the 7 <sup>th</sup> International Conference on Multiphase Flow, ICMF, Tampa, Florida, U.S.A.

## Complementary Information

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### Languages

French, English, Spanish (level C1 of the Instituto de Idioma de la Universidad de Sevilla).

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