

CURRICULUM VITAE

1. *Personal Data*

First Name: **Javier**

Second Name: **Alberto**

Family Name: **Diez**

Phone: 0054-249-4385660/1/9 (ext. 123)

e-mail: jdiez@exa.unicen.edu.ar

Official Address: Instituto de Fisica Arroyo Seco, Pinto 399, 7000, Tandil, Argentina.

2. *Education*

- 1985 Graduated as Licenciado en Ciencias Fisicas (M. Sc.) from Facultad de Ciencias Exactas (FCEX), Universidad Nacional del Centro de la Provincia de Buenos Aires (UNCPBA), Argentina. Thesis: Interaction Shock Wave-Interface and Its Numerical Treatment.
- 1990 Ph. D. in Physics, obtained in Facultad de Ciencias Exactas (FCEX), Universidad Nacional del Centro de la Provincia de Buenos Aires (UNCPBA), Argentina. Thesis: Self-similar solutions in viscous gravity currents.

3. *Research and teaching positions*

- ✓ 1982 - 1985, Student Assistant, FCEX-UNCPBA.
- ✓ 1986 - 1989, Teaching Assistant, FCEX-UNCPBA and Universidad Nacional de Mar del Plata (Argentina).
- ✓ 1987 - 1992, Internal Fellow of National Research Council (CONICET-Argentina).
- ✓ 1998 - 1999, External Fellow of National Research Council (CONICET-Argentina).
- ✓ 1990 - 2007, Assistant Professor at Facultad de Ciencias Exactas (FCEX), Universidad Nacional del Centro de la Provincia de Buenos Aires (UNCPBA), Argentina.
- ✓ 1995-2004, Adjoined Researcher of National Research Council (CONICET-Argentina).
- ✓ 2008- *present*, Associate Professor at Facultad de Ciencias Exactas (FCEX), Universidad Nacional del Centro de la Provincia de Buenos Aires (UNCPBA), Argentina.
- ✓ 2005- *present*, Independent Researcher of National Research Council (CONICET -Argentina).

4. *Grants*

- ✓ Organization of American States (OAS): *Regular Training Program* (8/1998- 8/1999).
- ✓ Fulbright Foundation: *Argentinian Researchers 2000* (12/2000-3/2001).
- ✓ Fulbright Foundation: *Alumni Initiative Award* (07/2004-07/2006).
- ✓ Agencia Nacional de Promoción Científica y Tecnológica (ANPCyT, Argentina): *PICTR 2002/00094* (06/2004-06/2007).
- ✓ CONICET, ANPCyT and CLAF (Latin American Physics Center) for the organization of the workshop *Pan-American Advanced Studies Institute (PASI) on Interfacial Fluid Dynamics: From Theory to Applications* (Mar del Plata, August 6-17, 2007)
- ✓ Agencia Nacional de Promoción Científica y Tecnológica (ANPCyT, Argentina): *PICT 2006/2498* (06/2008-06/2010).
- ✓ Agencia Nacional de Promoción Científica y Tecnológica (ANPCyT, Argentina): *PICT 2006/2498* (01/2008-01/2010).
- ✓ International Cooperation Program CONICET-NSF, Res. Nro. 1347/02-06-10 (06/2010-06/2011)
- ✓ Multianual Research Project (PIP-CONICET 112-201101-00844) (2012-2014)
- ✓ Agencia Nacional de Promoción Científica y Tecnológica (ANPCyT, Argentina): *PICT 2012/933* (06/2013-06/2016).

5. *Teaching*

- a) *Undergraduate*: Elementary physics (Mechanics, Hydrodynamic, Thermodynamics, Sound, Electricity and Magnetism), and upper level courses (Electromagnetism, Fluid Mechanics, Continuum Mechanics).
- b) *Graduate*: "Very viscous flows", FCEx-UNCPBA.

6. *International Publications*

- 1) L. Thomas, V. Pais, R. Gratton, J. Diez, *A numerical study on the transition to self-similar flow in collapsing cavities*, Phys. Fluids **29**, 676 (1986).
- 2) J. Diez, L. Thomas, *Free expansion of a gas against a rigid wall*, Phys. Fluids A **1**(2), 285 (1989).
- 3) J. Diez, L. Thomas, *Acceleration of a slab driven by a constant pressure piston*, Phys. Fluids A **1**(8), 1426 (1989).
- 4) L. Thomas, J. Diez, *Entropy distribution in a slab driven by a two-step pressure pulse*, Plasma Physics and Controlled Fusion **31**(12), 1951 (1989).
- 5) L. Thomas, J. Diez, *Compression of a gas by a solid slab: Entropy distribution due to a two-step pressure pulse*, Nuclear Fusion **30**(11), 2397 (1990).
- 6) J. Diez, J. Gratton, F. Minotti, *Self-similar solutions of the second kind of nonlinear diffusion-type equations*, Quart. J. of Appl. Math. **50**(3), 401-414 (1992).
- 7) J. Diez, R. Gratton, J. Gratton, *Self-similar solution of the second kind for a convergent viscous gravity current*, Phys. Fluids A **4**(6), 1148-1155 (1992).
- 8) J. Diez, R. Gratton, L. Thomas, B. Marino, *Laplace pressure driven drop spreading*, Phys. Fluids A **6**(1), 24 (1994).
- 9) J. Diez, R. Gratton, L. Thomas, B. Marino, *Laplace pressure driven drop spreading: Quasi self similar solution*, J. Colloid and Interface Sci. **168**, 15 (1994).
- 10) L. Thomas, R. Gratton, B. Marino, J. Diez, *Droplets profiles obtained from the intensity distribution of refraction patterns*, Applied Optics **34**, 5840 (1995).
- 11) B. Marino, L. Thomas, J. Diez, R. Gratton, *Capillarity effects on viscous gravity spreadings of wetting fluids*, J. Colloid and Interface Sci. **177**, 14 (1996).
- 12) R. Gratton, J. Diez, L. Thomas, B. Marino, S. Betelú, *Quasi self similar approach for wetting drops spreadings*, Phys. Rev. E **53**, 3563 (1996).
- 13) L. Thomas, R. Gratton, B. Marino, S. Betelú, J. Diez, *Measurement of the slope of a liquid free surface along a line by a schlieren system with anamorphic elements*, Measurements Science and Technology **7**, 1 (1996).
- 14) S. Betelú, J. Diez, L. Thomas, R. Gratton, B. Marino, *Instantaneous viscous flow in a corner bounded by free surfaces*, Phys. Fluids **8**, 2269 (1996).
- 15) S. Betelú, J. Diez, L. Thomas, R. Gratton, B. Marino, *A boundary-elements method for viscous gravity currents*, Int. J. for Num. Methods in Fluids **25**, 1 (1997).
- 16) B. Marino, L. Thomas, R. Gratton, J. Diez, S. Betelú, *Waiting time solutions of a non-linear diffusion Equation: Experimental study of a creeping flow near a waiting front*, Phys. Rev. E. **54**, 2628 (1996).
- 17) J. Diez, S. Betelú, R. Gratton, *The crumbling of a viscous liquid prism with an inclined free surface*, Arch. Appl. Mech. **68**(6), 407-421 (1998).
- 18) S. Betelú, R. Gratton, J. Diez, *Observation of cusps during the levelling of free surfaces in viscous flows*, J. Fluid Mech. **377**, 137-149 (1998).
- 19) J. Diez, L. P. Thomas, S. Betelú, R. Gratton, B. Marino, J. Gratton, D. G. Aronson, S. B. Angenent, *Non-circular focussing flow in viscous gravity currents*, Phys. Rev. E **58**(5), 6182 (1998).
- 20) S. Betelú, J. Diez, *A two-dimensional similarity solution for capillary driven flows*, Physica D **2168**, 1-5 (1998).
- 21) S. Betelú, J. Diez, R. Gratton, *Cusped ripples at the plane surface of a viscous liquid*, Arch. Appl. Mech. **69**(1), 36-46 (1999).
- 22) Kondic, L., Diez, J., *"Instabilities in the flow of thin liquid films"*, Proceedings of IUTAM Symposium on Free Surface Flows, eds. A. C. King and Y. D. Shikhmurzaev, Fluid Mechanics and its Applications **62**, 161-168 (2001), Kluwer Academic Publishers, Norwell, MA.

- 23) J. Diez, L. Kondic, L., A. Bertozzi, *Global models for moving contact lines*, Phys. Rev. E **63**, 011208 (2001).
- 24) J. Diez, L. Kondic, *Contact line instabilities of thin liquid films*, Phys. Rev. Lett. **86**, 632 (2001).
- 25) L. Kondic, J. Diez, *Pattern formation in a gravity driven flow of thin films: Constant flux flow*, Phys. Fluids **13**(11), 3168 (2001).
- 26) L. Kondic, J. Diez, *Flow of thin films on patterned surfaces: Controlling the instability*, Phys. Rev. E **65**, 045301 (2001).
- 27) J. Diez, L. Kondic, *Computing three dimensional thin film flows including contact lines*, J. Comp. Physics **183**, 274-306 (2002).
- 28) L. Kondic, J. Diez, *Flow of thin films on patterned surfaces*, Colloids and Surfaces A **214**, 1-11 (2002).
- 29) J. Diez, L. Kondic, *Instabilities in the flow of thin films*, Int. J. Heat and Technology. **1**, 31 (2003).
- 30) L. Kondic, J. Diez, *Instabilities in the flow of thin films on heterogeneous surfaces*, Phys. Fluids **16**(9), 3341 (2004).
- 31) A. G. González, J. Diez, J. Gomba, R. Gratton, L. Kondic, *Spreading of a thin two-dimensional strip of fluid on a vertical plane: Experiments and modeling*, Phys. Rev. E **70**, 026309(2004).
- 32) J. Gomba, J. Diez, A. G. González, R. Gratton, *Spreading of a micrometric fluid strip down a plane under controlled initial conditions*, Phys. Rev. E. **71**, 016304 (2005).
- 33) J. Diez, A. G. González, J. Gomba, R. Gratton, L. Kondic, *Unstable spreading of a fluid filament on a vertical plane: Experiments and simulations*, Physica D **209**, 49-61 (2005).
- 34) L. Kondic, J. Diez, *On nontrivial traveling waves in thin films flows including contact lines*, Physica D **209**, 135-144 (2005).
- 35) A. G. González, J. Diez, R. Gratton, J. Gomba, "Rupture of a fluid strip under partial wetting conditions", Europhysics Letters **77**, 44001-1/5 (2007).
- 36) J. Diez, L. Kondic, "On breakup of fluid films of finite and infinite extent", Physics of Fluids Physics of Fluids **19**, 072107 (2007).
- 37) J. Gomba, J. Diez, R. Gratton, A. G. González, L. Kondic, "Stability study of a constant-volume thin film flow", Physical Review. E **76**, 046308 (2007)
- 38) L. Kondic, J. Diez, P. D. Rack, Y. Guan, J. D. Fowlkes, "Nanoparticle assembly via the dewetting of patterned thin metal lines: Understanding the instability mechanisms", Physical Review. E **79**, 026302-1/7 (2009).
- 39) J. Diez, A. G. González, L. Kondic, "On the breakup of fluid rivulets", Physics of Fluids **21**, 082105 (2009).
- 40) J. Diez, A. G. González, L. Kondic, "Stability of a finite-length rivulet under partial wetting conditions", Journal of Physics: Conference Series **166**, 012009 (2009).
- 41) A. G. González, J. Diez, R. Gratton, D. Campana, F. Saita, "Instability of a viscous liquid coating on a cylindrical fiber", Journal of Fluid Mechanics **651**, 117 (2010)
- 42) Y. Wu, J. D. Fowlkes, P. D. Rack, J. A. Diez, L. Kondic, "On the breakup of patterned nanoscale copper rings into droplets via pulsed laser induced dewetting: Competing liquid phase instability and transport mechanisms", Langmuir **26**, 11972 (2010)
- 43) J. D. Fowlkes, L. Kondic, J. A. Diez, Y. Wu, P. D. Rack, "Self- versus directed- assembly of nanoparticles via pulsed laser induced dewetting of patterned metal films", Nano Letters **11**, 2478 (2011).
- 44) Y. Wu, J. D. Fowlkes, N. A. Roberts, J. A. Diez, L. Kondic, P. D. Rack, "Competing liquid phase instabilities during pulsed laser induced self-assembly of copper rings into ordered nanoparticle arrays on SiO₂", Langmuir **27**, 13314 (2011)
- 45) J. Diez, A. G. González, L. Kondic, "Instability of a transverse liquid rivulet on an inclined plane", Physics of Fluids **24**, 032104 (2012).
- 46) J. T. Dac Nguyen, M. Fuentes-Cabrera, J. D. Fowlkes, J. A. Diez, A. G. González, L. Kondic, P. D. Rack, "Competition between collapse and breakup in nanometer-sized thin rings using molecular dynamics and continuum modeling", Langmuir (DOI: 10.1021/la303093f) (2012)

- 47) J. D. Fowlkes, L. Kondic, J. Diez, A. G. González, Y. Wu, N. A. Roberts, C. E. McCold, P. D. Rack, “Parallel assembly of particles and wires on substrates by dictating instability evolution in liquid metal films”, *Nanoscales* **23**, 7283 (2012)
- 48) A. G. González, J. Diez, L. Kondic, “Stability of a liquid ring on a substrate”, *Journal of Fluid Mechanics* **718**, 246 (2013)
- 49) G. González, J. A. Diez, Y. Wu, D. Fowlkes, P. D. Rack, L. Kondic, “Instability of liquid Cu films on a SiO₂ substrate”, *Langmuir* **29**, 9378 (2013).
- 50) K. Mahady, S. Afkhami, J. Diez, L. Kondic, “Comparison of Navier-Stokes simulations with long-wave theory: Study of wetting and dewetting”, *Physics of Fluids* **25**, 112103 (2013).
- 51) J. D. Fowlkes, N. A. Roberts, Y. Wu, J. A. Diez, A. G. González, C. Hartnett, L. Kondic, K. Mahady, S. Afkhami, P. D. Rack, “Hierarchical nanoparticle ensembles synthesized by liquid phase directed self-assembly”, *Nanoletters* **14**, 774 (2014)
- 52) J. A. Diez, A. G. González, “Breakup of thin liquid filaments on partially wetting substrates: from micrometric to nanometric scales”, *Brazilian Journal of Physics* **46**, 225 (2016)
- 53) A. G. González, J. A. Diez, M. Sellier, “Inertial and dimensional effects on the instability of a thin film”, *Journal of Fluid Mechanics* **787**, 449–473 (2016).
- 54) J. A. Diez, A. G. González, R. Fernández, “Metallic thin-film instability with thermal noise: The role of spatially extended noise correlations”, *Physical Review E* **93**, 013120 (2016).
- 55) P. D. Ravazzoli, A. G. González, J. A. Diez, “Drops with non-circular footprints”, *Physics of Fluids* **28**, 042104 (2016)

7. National Publications (in Argentina)

- 1) J. Diez, L. Thomas, V. Pais, *Criterios de Discretización para el Tratamiento Numérico de la Interacción Onda de Choque-Interfase*, *Mecánica Computacional* **1**, 286 (1986).
- 2) J. Diez, R. Gratton, J. Gratton, *Estudio Experimental de Flujos Viscosos Unidireccionales*, *Anales AFA* **1**, 161 (1989).
- 3) J. Diez, R. Gratton, J. Gratton, *Verificación Experimental de una Solución Autosimilar de Segunda Especie: Flujo de Lubricación Convergente*, *Anales AFA* **1**, 164 (1989).
- 4) J. Diez, R. Gratton, *Corrientes Viscogravitatorias: Validez de la Teoría de Lubricación*, *Anales AFA* **2**, 171 (1990).
- 5) J. Diez, R. Gratton, *Corrientes Viscogravitatorias: Resolución Numérica de la Ecuación de Difusión No Lineal*, *Anales AFA* **2**, 174 (1990).
- 6) L. Thomas, J. Diez, *Aceleración de dos capas, una sólida y otra gaseosa, por una presión constante*, *Anales AFA* **2**, 177 (1990).
- 7) J. Gratton, E. Rosello, J. Diez, *Physical Modeling of Free Flows: Waiting-time Behaviour*, *Anales de la Academia Nacional de Ciencias Exactas, Física y Naturales*, 51-63 (1992).
- 8) L. Thomas, J. Diez, B. Marino, R. Gratton, J. Gratton, *Corrientes viscogravitatorias con frentes que esperan*, *Anales AFA* **3**, 213 (1991).
- 9) B. Marino, L. Thomas, R. Gratton, J. Diez, *Derrames viscogravitatorios con simetría axial de fluidos siliconados*, *Anales AFA* **4**, 365 (1993).
- 10) R. Gratton, J. Diez, L. Thomas and B. Marino, *Liquid Spreading on a Solid Surface driven by both Gravity and Surface Tension*, *Física de Fluidos* 93 (Serie Informe **49**, CICPBA), 66-82 (1994).
- 11) J. Diez, R. Gratton, L. Thomas, S. Betelú, B. Marino, *El balance de energía como ligadura en el derrame de gotas*, *Anales AFA* **7**, 53 (1996).
- 12) J. Diez, L. Kondic, *Instabilidades de línea de contacto en flujos de capas delgadas*, *Anales AFA* **12**, 98 (2001).
- 13) J. Gomba, A. G. González, J. Diez, R. Gratton, L. Kondic, *Instability of the contact line and thickness profiles in vertical oil spreadings*, *Anales AFA* **14**, 86 (2002).

8. Presentations:

a) International

- 1) J. Diez, *Liquid spreading on a solid surface driven by both gravity and surface tension*, “Workshop on Fluid Mechanics, 7-25 March 1994, ICTP, Trieste, Italia.
- 2) J. Diez, *Non-circular focussing flow in viscous gravity currents*, 51st. Annual Meeting Division of Fluid Dynamics, American Physical Society (APS), Nov. 22-24, 1998, Philadelphia, Pennsylvania.
- 3) Kondic, L., Diez, J., *Instabilities in the flow of thin liquid films*, Fifth SIAM Conference on Applications of Dynamical Systems”, Snowbird, Utah, 23-27 May 1999.
- 4) Kondic, L., Diez, J., *Instabilities in the flow of thin liquid films*, Interfaces for the Twenty First Century, Monterrey, California, 15-18 Aug. 1999.
- 5) Kondic, L., Diez, J., Bertozzi, A., *Pattern formation in thin film flows*, Third SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, Pennsylvania, 22-24 May 2000.
- 6) Kondic, L., Diez, J., *Instabilities in the flow of thin liquid films*, IUTAM Symposium on Free Surface Flows, Birmingham, UK, 10-14 July 2000.
- 7) Kondic, L., Diez, J., *Nonlinear dynamics of thin film flows*, ICTAM 2000, Chicago, Illinois, 28-30 Aug. 2000.
- 8) Kondic, L., Diez, J., *Instabilities in the flow of thin liquid films*, AIChE 2000 Annual Meeting, Los Angeles, California, 12-17 Nov. 2000.
- 9) L. Kondic, J. Diez, *Thin films flows on patterned surfaces: Controlling the instability*, 54th. Annual Meeting Division of Fluid Dynamics, American Physical Society (APS), 18-20 Nov. 2001, San Diego, California.
- 10) L. Kondic, J. Diez, *Thin films flows on heterogeneous surfaces*, Nanocapillarity: Wetting of heterogeneous surfaces and porous solids, 25-27 June 2001, Princeton, New Jersey.
- 11) J. Diez, L. Kondic, *Contact line instabilities in thin films flowing down an incline*, VII International Seminar on Recent Advances in Fluid Mechanics, Physics of Fluids, and Associated Complex Systems, 17-19 Oct. 2001, Buenos Aires, Argentina.
- 12) L. Kondic, J. Diez, *Coalescence of liquid drops*, SIAM 50th Anniversary and 2002 Annual Meeting, July 8-12, 2002, Philadelphia, Pennsylvania.
- 13) J. Diez, J. Gomba, A. González, R. Gratton, L. Kondic, *Contact line instabilities and thickness profiles of spreading film*, 55th. Annual Meeting Division of Fluid Dynamics, American Physical Society (APS), Noviembre 24-26, 2002, Dallas, Texas.
- 14) J. Diez, A. G. González, J. Gomba, R. Gratton, L. Kondic, *Contact line instability: Comparison between experiments and numerical simulations*, 56th. Annual Meeting Division of Fluid Dynamics, American Physical Society (APS), 23-25 Nov. 2003, East Rutherford, New Jersey.
- 15) J. Diez, *Spreading of a thin two-dimensional strip of fluid on a vertical plane: Experiments and modeling*, Workshop on Non-Linear Dynamics of Thin Films and Fluid Interfaces, 29 Nov- 4 Dec. 2003, Banff International Research Station, Banff, Canada.
- 16) J. Gomba, A. González, J. Diez, R. Gratton, L. Kondic, *Experiments and modelling of contact line instabilities in thin liquid films*, International Workshop on Pattern Formation through Instabilities in Thin Liquid Films: From Fundamental Aspects to Applications, Max-Planck-Institut für Physik komplexer Systeme, Dresden, Germany, 21-28 Sept. 2004.
- 17) J. Diez, J. Gomba, A. González, R. Gratton, *Instability of a micrometric fluid strip under controlled initial conditions*, 57th Annual Meeting Division of Fluid Dynamics, American Physical Society (APS), 21-23 Nov. 2004, Seattle, Washington.
- 18) L. Kondic, J. Diez, “*Instability of a fluid strip*”, IPAM (Institute for Pure and Applied Mathematics) Workshop on Thin Films and Fluid Interfaces, 30 Enero – 2 Febrero 2006, Los Angeles (California, USA).
- 19) J. Diez, A. González, R. Gratton, J. Gomba, “*Pearling process of a fluid strip on a partially wetting surface*”, IUTAM Symposium Interactions for Dispersed Systems in Newtonian and Viscoelastic Fluids, 26-30 Marzo 2006, Guanajuato (México).

- 20) J. Diez, L. Kondic, “*Breakup of a finite length fluid film*”, 59th. Annual Meeting Division of Fluid Dynamics”, American Physical Society (APS), 19-21 Noviembre 2006, Tampa Bay, Florida (USA).
- 21) J. Diez, “*Experimental techniques in free surface flows*”, Pan-American Advanced Studies Institute (PASI) on Interfacial Fluid Dynamics: From Theory to Applications, 6-17 Agosto 2007, Mar del Plata (Argentina).
- 22) A.G. González, J. Diez, R. Gratton, “*Experimental and theoretical studies of fiber coating instabilities*”, Pan-American Advanced Studies Institute (PASI) on Interfacial Fluid Dynamics: From Theory to Applications, 6-17 Agosto 2007, Mar del Plata (Argentina)
- 23) L. Kondic, J. Diez, A.G. González, “*On instabilities of finite-size films and rivulets*”, Higher Order Geometric Evolution Equations: Theory and Applications from Microfluidics to Image Understanding, Minneapolis, Minnesota, 23-26 de marzo de 2009.
- 24) J. D. Fowlkes, L. Kondic, J. A. Diez, A. V. Melechko, R. Kalyanaraman, H. Krishna, Y. Wu, P. D. Rack, “*Directed, Liquid Phase Assembly of Patterned, Thin Metallic Films by Pulsed Laser Dewetting*”, 53rd International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication, 26-29 mayo 2009, San Marco (Florida, USA).
- 25) Y. Wu, L. Kondic, J. A. Diez, R. Kalyanaraman, H. Krishna, J.D. Fowlkes, P.D. Rack, “*Directed, Liquid Phase Assembly of Patterned and Thin Metallic Films by Pulsed Laser Dewetting*” MRS Fall Meeting, Boston, MA (nov. 29-dic. 4, 2009).
- 26) J. Diez, A. G. González, L. Kondic, P. Rack, “*The stability of partial wetting fluid rivulets: Application to nanometric melted metallic films*”, VIII Ibero-American Workshop on Complex Fluids and their Applications, 8-11 septiembre 2009, João Pessoa (Paraíba, Brazil).
- 27) J. Diez, A. González, L. Kondic, P. Rack, “*Instability of a micrometric fluid strip under controlled initial conditions*”, 62nd. Annual Meeting Division of Fluid Dynamics”, American Physical Society (APS), 21-23 noviembre 2009, Minneapolis, Minnesota, USA.
- 28) L. Kondic, J. Diez, Y. Wu, J. D. Fowlkes, P. D. Rack, “*On the breakup of patterned nanoscale liquid metal rings*”, Proceedings of the Eighth Euromech Fluid Mechanics Conference, p. S8-9, Bad Reichenhall, Germany, Septiembre 2010.
- 29) Y. Wu, L. Kondic, J. Diez, J. D. Fowlkes, P.D. Rack, “*Self and Directed Assembly of Thin Metallic Films by Pulsed Laser Induced Dewetting*”, 57th International American Vacuum Society Symposium, Albuquerque, New Mexico, 17-21 octubre, 2010.
- 30) J. Diez, A. G. González, “*Ruptura de filamentos líquidos rectos sobre substratos inclinados con mojabilidad parcial*”, XI Reunión sobre Recientes Avances en Física de Fluidos y sus Aplicaciones, Colonia del Sacramento, Uruguay, 3 al 5 de noviembre de 2010
- 31) A. G. González, J. Diez, “*Ruptura de anillos líquidos sobre substratos horizontales con mojabilidad parcial*”, XI Reunión sobre Recientes Avances en Física de Fluidos y sus Aplicaciones, Colonia del Sacramento, Uruguay, 3 al 5 de noviembre de 2010.
- 32) J. Diez, A. G. González, L. Kondic, P. Rack, “*Modelos para la ruptura de filamentos líquidos sobre substratos*”, XI Reunión sobre Recientes Avances en Física de Fluidos y sus Aplicaciones, Colonia del Sacramento, Uruguay, 3 al 5 de noviembre de 2010.
- 33) J. Diez, L. Kondic, Y. Wu, J. D. Fowlkes, P. D. Rack, “*On the breakup of nanoscale metallic rings melted via laser pulses*”, 63rd. Annual Meeting Division of Fluid Dynamics”, American Physical Society (APS), 21-23 noviembre 2010, Long Beach, California, USA.
- 34) A. G. González, J. Diez, R. Gratton, D. Campana, F. Saita, “*Coating of a cylindrical fibre: Instability and drop formation*”, Bull. Amer. Phys. Soc., **55**, 285, 63rd Annual Meeting of Division of Fluid Dynamics (DFD) of the American Physical Society (APS), 21-23 noviembre 2010, Long Beach, California, USA.
- 35) Y. Wu, J. Fowlkes, P. Rack, L. Kondic, J. Diez, “*Self and Directed Assembly of Thin Metallic Films Exposed to Pulsed Laser Irradiation*”, Bull. Amer. Phys. Soc., **56**, 751, Annual Meeting of the American Physical Society (APS), Dallas, Texas, marzo 2011.
- 36) J. D. Fowlkes, L. Kondic, J. Diez, Y. Wu, P. D. Rack, “*The Directed Assembly of Metallic Nanoparticle Chains by Pulsed Laser Induced Dewetting and Nanolithography*” 55th International Conference on Electron, Ion, and Photon Beam Technology and Nanofabrication, Las Vegas, Nevada, 31 mayo – 3 junio, 2011.

- 37) A. G. González, J. Diez, L. Kondic, “*Contact line instability of a liquid rivulet partially wetting an inclined plane*”, Bull. Amer. Phys. Soc., **56**, 407, 64th Annual Meeting of Division of Fluid Dynamics (DFD) of the American Physical Society (APS), Baltimore, Maryland, 20-21 noviembre 2011.
- 38) J. Diez, A. G. González, J. D. Fowlkes, N. A. Roberts, P. Rack, L. Kondic, “*Pulsed laser induced self-assembly of nanoparticle arrays: Competing liquid phase instabilities*”, Bull. Amer. Phys. Soc., **56**, 247, 64th Annual Meeting of Division of Fluid Dynamics (DFD) of the American Physical Society (APS), Baltimore, Maryland, 20-21 noviembre 2011.
- 39) J. Diez, A. G. González, T. Nguyen, M. Fuentes-Cabrera, J. D. Fowlkes, P. Rack, L. Kondic, “*Nanometric rings: Molecular dynamics and continuum modelling*”, XII Reunión sobre Recientes Avances en Física de Fluidos y sus Aplicaciones, Buenos Aires, 5 al 7 de noviembre de 2012.
- 40) A. G. González, J. Diez, J. D. Fowlkes, Y. Wu, N. Roberts, C. McCold, P. Rack, L. Kondic, “*Linear structures of nanodrops generated from patterned filaments*”, XII Reunión sobre Recientes Avances en Física de Fluidos y sus Aplicaciones, Buenos Aires, 5 al 7 de noviembre de 2012.
- 41) A. G. González, J. Diez, L. Kondic, “*Using instability of nanometric liquid Cu films on SiO₂ substrates to determine the underlying van der Waals potential*”, Bull. Amer. Phys. Soc., **58**, 70, 66th Annual Meeting of Division of Fluid Dynamics (DFD) of the American Physical Society (APS), Pittsburgh, Pennsylvania, 24-26 noviembre 2013.
- 42) J. Diez, A. G. González, L. Kondic, “*Theoretical models for the stability of a liquid ring on a substrate*”, Bull. Amer. Phys. Soc., **58**, 71, 66th Annual Meeting of Division of Fluid Dynamics (DFD) of the American Physical Society (APS), Pittsburgh, Pennsylvania, 24-26 noviembre 2013.
- 43) J. Diez, A. G. González, L. Kondic, P. Rack, J. Fowlkes, “*Instabilities and pattern formation in thin liquid films: from micrometric to nanometric scales*”, IX Ibero-American Workshop on Complex Fluids and their Applications, 14-18 octubre 2013, Maceió (Alagoas, Brasil).
- 44) T. Nguyen, M. Fuentes-Cabrera, J. D. Fowlkes, J. A. Diez, A. G. González, L. Kondic, P. Rack, “*Large-Scale Molecular Dynamics Study of Dewetting of Thin Liquid Films On Solid Substrates*”, 2013 AIChE Annual Meeting: Global Challenges for Engineering a Sustainable Future, 3-8 noviembre 2013, San Francisco, EEUU.
- 45) J. A. Diez, A. G. González, “*Thin film instability with thermal noise*”, XIII Reunión sobre Recientes Avances en Física de Fluidos y sus Aplicaciones, Tandil, Argentina, 5 al 7 de noviembre de 2014.
- 46) A. G. González, J. A. Diez, “*Inertial and dimensional effects on the instability of a thin film*”, XIII Reunión sobre Recientes Avances en Física de Fluidos y sus Aplicaciones, Tandil, Argentina, 5 al 7 de noviembre de 2014.
- 47) P. D. Ravazzoli, J. A. Diez, A. G. González, “*Characterization of drops with non circular footprints*”, XIII Reunión sobre Recientes Avances en Física de Fluidos y sus Aplicaciones, Tandil, Argentina, 5 al 7 de noviembre de 2014.
- 48) P. D. Ravazzoli, I. Cuellar, A. G. González, J. A. Diez, “*Estudio de la dinámica de retracción del extremo de un filamento líquido*”, XIV Reunión sobre Recientes Avances en Física de Fluidos y sus Aplicaciones, La Plata, Argentina, 9 al 11 de noviembre de 2016.
- 49) I. Cuellar, P. D. Ravazzoli, A. G. González, J. A. Diez, “*Influencia de la longitud de un filamento líquido en la determinación del número de gotas resultantes*”, XIV Reunión sobre Recientes Avances en Física de Fluidos y sus Aplicaciones, La Plata, Argentina, 9 al 11 de noviembre de 2016.

b) National (in Argentina):

68 presentations in national meetings from 1986 to date (not listed for brevity).

9. *Journals referee:*

- 1) Journal of Colloid and Interface Science.
- 2) SIAM Journal of Applied Mathematics.
- 3) Physical Review E.
- 4) Physical Review Letters
- 5) Journal of Fluid Mechanics

6) Interfacial Phenomena and Heat Transfer (Associate Editor)

10. Thesis Committees

PhD. Theses:

- 1) By Silvia Obernauer, Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Buenos Aires: "*Inestabilidades entre fluidos miscibles en medios porosos*" ("*Instabilities between miscible fluids in porous media*"), Dec. 1999.
- 2) By Mario Cachile, Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Buenos Aires: "*Esparcimientos de soluciones de tensioactivos*" ("*Spreadings of tensioactive solutions*"), July 2000.
- 3) By Carlos Alberto Perazzo, Facultad de Ciencias Exactas y Naturales, Universidad Nacional de Buenos Aires: "*Soluciones con tiempo de espera de la ecuación de difusión no lineal*" ("*Waiting time solutions of the nonlinear diffusion equation*"), August 2002.
- 4) By Sebastián Ubal, Facultad de Ingeniería y Ciencias Hídricas, Universidad Nacional del Litoral: "*Estudio de la influencia del espesor del líquido y de los surfactantes sobre las ondas de Faraday bidimensionales. Análisis numérico*" ("*Study of the influence of liquid thickness and surfactant on bidimensional Faraday waves: Numerical Analysis*"), December 2002.
- 5) By Diego Martín Campana, Facultad de Ingeniería y Ciencias Hídricas, Universidad Nacional del Litoral: "*Análisis numérico de los efectos de surfactantes solubles sobre los procesos de formación y desestabilización de películas líquidas en tubos capilares*" ("*Numerical analysis on the effects of soluble surfactants in the processes of formation and distabilization of liquid films in capillary tubes*"), May 2005.

Lic. (MSc) Physics Theses:

- 1) By Marcos Chaparro, Facultad de Ciencias Exactas, Universidad Nacional del Centro de la Provincia de Buenos Aires: "*Caracterización magnética de distintos tipos de suelos: Aplicaciones*" ("*Magnetic characterization of different kinds of soils: Applications*"), Sept. 1999.
- 2) By Graciela Santos, Facultad de Ciencias Exactas, Universidad Nacional del Centro de la Provincia de Buenos Aires: "*Técnicas de cálculo en aniquilación de positrones*" ("*Calculation techniques in positron annihilation*"), Sept. 1995.

11. Research activities in foreign countries

- 1) International Center for Theoretical Physics, Trieste, Italy, 21–31 Jan. 1991.
- 2) International Center for Theoretical Physics, Trieste, Italy, 7-25 March 1993.
- 3) Visiting scholar at Mathematics Department of Duke University, Durham, North Carolina, USA (Feb. 1997).
- 4) Visiting scholar at Mathematics Department of Duke University, Durham, North Carolina, USA (Aug. 1998 – Aug. 1999).
- 5) Visiting Professor at Mathematics Department of New Jersey Institute of Technology, Newark, New Jersey, USA (Dec. 2000 – March 2001).

12. Invited lectures

- 1) Mathematics Department, Duke University (Durham, North Carolina, Feb. 10, 1997).
- 2) School of Mathematics, University of Minnesota (Minneapolis, Minnesota, Feb. 20, 1997).
- 3) Physics Department, Kansas University (Manhattan, Kansas, Feb. 25, 1997).
- 4) Center for Nonlinear Dynamics and Complex Systems, Duke University (Durham, North Carolina, Oct. 18, 1998).
- 5) Mathematics Department, University of Minnesota (Minneapolis, Minnesota, April 24, 1999).
- 6) Massachusetts Institute of Technology. Mathematics Department (Cambridge, Massachusetts, Feb. 16, 2001).
- 7) Department of Mathematical Sciences, New Jersey Institute of Technology (Newark, New Jersey, Feb. 13, 2001).

- 8) Department of Mathematical Sciences, New Jersey Institute of Technology (Newark, New Jersey, Nov. 26, 2003).
- 9) Department of Mathematical Sciences, New Jersey Institute of Technology (Newark, New Jersey, Nov. 15, 2004).
- 10) Department of Mathematical Sciences, New Jersey Institute of Technology (Newark, New Jersey, July 7, 2005)
- 11) Department of Mathematical Sciences, New Jersey Institute of Technology (Newark, New Jersey, July. 13, 2006).
- 12) TRI/Princeton, Princeton University, July 14, 2006.
- 13) The University of Tennessee (Knoxville, TN, USA), Materials Science and Engineering Department, 19/11/09
- 14) New Jersey Institute of Technology (NJIT) (Newark, NJ, USA): Mathematics Department, 29/11/10.

13. *Graduate students:*

- ✓ Advisor of PhD Thesis of Juan M. Gomba (defended on March 22nd, 2006, UNCPBA)
- ✓ Advisor of PhD Thesis of Pablo Ravazoli (Oct. 2013 - ..., UNCPBA)
- ✓ Co-Advisor of PhD Thesis of Ingrith Cuellar (March 2015-.... UNCPBA)

14. *Other selected activities*

- ✓ *Director of Physics Department, Facultad de Ciencias Exactas, Universidad Nacional del Centro de la Provincia de Buenos Aires (Jun/93 – Jun/95).*
- ✓ *Local organizer of the Pan American Study Institute (PASI) on Interfacial Fluid Dynamics, Argentina, 2007, attended by 80 lecturers, senior and postdoctoral researchers and graduate students originating from more than 10 countries. Supported by: the PASI NSF grant, Grants from the International Center for Theoretical Physics (ICTP), Trieste, Italy; the National Council for Scientific and Technical Research (CONICET), Argentina; the Latin American Physics Center (CLAF), Brazil.*
- ✓ *Editor of the Program Book of the Pan American Study Institute (PASI) on Interfacial Fluid Dynamics, Mar del Plata, Argentina, August 2007 (with L. Kondic, A. G. González, and J. Gomba) (70 pages).*
- ✓ *Secretary of Science, Art and Technology of Universidad Nacional del Centro de la Provincia de Buenos Aires (13 Dec/07-18 Dec/08).*
- ✓ *Vicedirector of “Instituto de Física Arroyo Seco” (Facultad de Ciencias Exactas, Universidad Nacional del Centro de la Provincia de Buenos Aires), Nov.2005 - Nov.2011*
- ✓ *Director of “Instituto de Física Arroyo Seco” (Facultad de Ciencias Exactas, Universidad Nacional del Centro de la Provincia de Buenos Aires) Dec. 2011 -.present.*
- ✓ *Vicedirector Primero del Centro de Investigaciones Científicas en Física e Ingeniería del Centro de la Provincia de Buenos Aires (CIFICEN, Unidad Ejecutora CONICET). Oct. 2013 - present*