



1. M. Alvaro, E. Cebrián, M. Carretero and L.L. Bonilla  
"Numerical methods for kinetic equations in semiconductor superlattices"  
Computer Physics Communications 184, 720-731 (2013)
2. M. Alvaro, L.L. Bonilla, M. Carretero, R.V.N. Melnik and S. Prabhakar  
"Transport in semiconductor nanowire superlattices described by coupled quantum mechanical and kinetic models"  
Journal of Physics: Condensed Matter 25, 335301 (2013)
3. S. Prabhakar, R. Melnik, and L.L. Bonilla  
"Coupled multiphysics, barrier localization, and critical radius effects in embedded nanowire superlattices"  
Journal of Applied Physics 113, 244306 (12 pp) (2013)
4. S. Prabhakar, R. Melnik, and L.L. Bonilla  
"Spin transition rates in nanowire superlattices: Rashba spin-orbit coupling effects"  
Journal of Physics D: Applied Physics 46, 265302 (6 pp) (2013)  
[arXiv:1207.6580].
5. S. Prabhakar, R. Melnik, and L.L. Bonilla  
"Electrical control of phonon-mediated spin relaxation rate in semiconductor quantum dots: Rashba versus Dresselhaus spin-orbit coupling"  
Physical Review B 87, 235202 (6 pp) (2013)  
[arXiv:1306.3135].
6. S. Prabhakar, R. Melnik, L.L. Bonilla, and J.E. Reynolds  
"Spin echo dynamics under an applied drift field in graphene nanoribbon superlattices"  
Applied Physics Letters 103, 233112 (5 pp) (2013)



1. O.G. Cantu Ros, G. Platero and L.L. Bonilla  
"Effects of noise on hysteresis and resonance width in graphene and nanotubes resonators"  
Physical Review B 87, 235424 (6 pp) (2013)  
[arXiv:1209.0975].
2. A.M. Lunde, C. Lopez-Monis, I.A. Vasiliadou, L.L. Bonilla and G. Platero  
"Temperature dependent dynamical nuclear polarization bistabilities in double quantum dots in the spin-blockade regime"  
Physical Review B 88, 035317 (24 pp) (2013)  
[arXiv:1211.7042].
3. A. Prados, A. Carpio and L.L. Bonilla  
"Sawtooth patterns in biomolecules force-extension curves: an equilibrium-statistical-mechanics theory"  
Physical Review E 88, 012704 (4 pp) (2013)  
[arXiv:1306.6742].



Mecánica  
de fluidos  
computacional

1. C. Chan-Braun, M. García-Villalba and M. Uhlmann  
"Spatial and temporal scales of force and torque acting on wall-mounted spherical particles in open channel flow"  
Phys. Fluids 25, 075103 (2013)



1. V. Bayona and M. Kindelan  
"Propagation of premixed laminar flames in 3D narrow open ducts using RBF-generated finite differences"  
Combustion Theory and Modelling 17, 789-803 (2013)
2. V. Bayona and M. Kindelan  
"Application of the RBF meshless method to laminar flame propagation"  
Engineering Analysis with Boundary Elements 37, 1617-1624 (2013)

#### LIBROS Y CAPÍTULOS

1. V. Bayona, M. Moscoso and M. Kindelan  
"Laminar flame propagation modeling using the Radial Basis Function (RBF) method"  
Boundary Elements and Other Mesh Reduction Methods XXXV. Edited by C.A. Brebbia and A.H-D. Cheng. WIT Transactions on Modelling and Simulation 54, 67-78 (2013)



Imaging y  
aplicaciones  
biomédicas

1. P. Gonzalez-Rodriguez, A. D. Kim and M. Moscoso  
"Robust depth selectivity in mesoscopic scattering regimes using angle-resolved measurements"  
Optics Letters 38, 787-789 (2013)
2. N. Irishina, M. Moscoso and R. Carminati  
"Recovering fluorophore location and orientation from lifetimes"  
Optics Express 21, 421-430 (2013)
3. N. Irishina and A. Torrente  
"Brain Stroke Detection by Microwaves Using Prior Information from Clinical Databases"  
Abstract and Applied Analysis 2013, 412638 (8 pp.) (2013)

4. A. Chai, M. Moscoso and G. Papanicolaou

"Robust imaging of localized scatterers using the singular value decomposition and l1 minimization"

Inverse Problems 29, 025016 (2013)



1. P. Boivin, A. L. Sánchez and F. A. Williams

"Four-step and three-step systematically reduced chemistry for wide-range H<sub>2</sub>- air combustion problems"

Combust. Flame 160, 76-82 (2013)

2. J. Arrieta-Sanagustín, A. L. Sánchez, A. Liñán and F. A. Williams

"Coupling-function formulation for monodisperse spray diffusion flames with infinitely fast chemistry"

Fuel Process. Technol. 107, 81-92 (2013)

3. M. J. Gollner, A. L. Sánchez and F. A. Williams

"On the heat transferred to the air surrounding a semi-infinite inclined hot plate"

J. Fluid Mec. 732, 304-315 (2013)

4. C. Huete, A. L. Sánchez and F. A. Williams

"Theory of interactions of thin strong detonations with turbulent gases"

Phys. Fluids 25, 076105 (2013)

## IGNICIÓN

1. J. Carpio, I. Iglesias, M. Vera, A. L. Sánchez and A. Liñán

"Critical radius for hot-jet ignition of hydrogen-air mixtures"

Int. J. Hydrogen Energy 38, 3105-3109 (e-journal) (2013)

2. E. Fernández-Tarrazo, A. L. Sánchez and F. A. Williams

"Hydrogen-air mixing-layer ignition at temperatures below crossover"

Combust. Flame 160, 1981-1989 (2013)

3. D. Martínez-Ruiz, J. Urzay, A. L. Sánchez, A. Liñán and F. A. Williams

"Dynamics of thermal ignition of fuel sprays in mixing layers"

J. Fluid Mec. 734, 387-423 (2013)



1. L. Lahti, A. Torrente, L.L. Elo, A. Brazma and J. Rung

"A fully scalable online pre-processing algorithm for short oligonucleotide microarray atlases"

Nucleic Acids Research 41, e110 (10 pp.) (2013)

2. A. Torrente, S. López-Pintado and J.Romo

"DepthTools: an R package for a robust analysis of gene expression data"

BMC Bioinformatics 14, 237 (11 pp.) (2013)

## Chorros y estelas

1. C. Gutiérrez-Montes, R. Bolaños-Jiménez, A. Sevilla and C. Martínez-Bazán  
"Experimental and numerical study of the periodic bubbling regime in planar co-flowing air-water sheets"  
Int. J. Multiphase Flow 50, 106-119 (2013)
2. J.I. Jiménez-González, E. Sanmiguel-Rojas, A. Sevilla and C. Martínez-Bazán  
"Laminar flow past a spinning bullet-shaped body at moderate angular velocities"  
Int. J. Fluids Struct. 43, 200-219 (2013)
3. M. Rubio-Rubio, A. Sevilla and J.M. Gordillo  
"On the thinnest steady threads obtained by gravitational stretching of capillary jets"  
J. Fluid Mech. 729, 471-483 (2013)
4. J.M. Gordillo, A. Sevilla and F. Campo-Cortés  
"Global stability of stretched jets: conditions for the generation of monodisperse micro-emulsions using coflows"  
J. Fluid Mech. 738, 335-357 (2013)