

## Sebastián Ferrer: Publicaciones

Nota: Las comunicaciones a Congresos aparecen señaladas con asterisco.

1. \* 2017 [with F. Crespo] “Relative Equilibria for the roto-orbital dynamics of a rigid body around a sphere” AAS 17-572 , AAS/AIAA Astrodynamics Specialist Conference Columbia River Gorge, Stevenson, WA, USA 20-24 August 2017,  
To appear in *Advances in the Astronautical Sciences*.
2. \* 2017 [with J. Cardoso and D. Scheeres] “Study of the roto-translational motion using intermediaries: Numerical experiments” The Seventh International Meeting on Celestial Mechanics, San Martino al Cimino (Viterbo, Italy) 3-9 September 2017,  
To appear in *Celestial Mechanics & Dynamical Astronomy*
3. 2017 [with F. Crespo, F.J. Molero, and D. Scheeres]  
“Intermediaries in Gravity-Gradient Attitude Dynamics. The axial symmetric case,”  
to appear in *The Journal of the Astronautical Sciences*
4. 2017 [with F. J. Molero and F. Crespo]  
“A Note on Reparametrizations of the Euler Equations,”  
*Qualitative Theory of Dynamical Systems*, Vol. 16, 2, pp 453–466,  
DOI 10.1007/s12346-016-0200-5
5. 2016 [with F. Crespo, G. Díaz, y M. Lara]  
“Poisson and symplectic reductions of 4-DOF isotropic oscillators. The van der Waals system as benchmark,”  
*Applied Mathematics and Nonlinear Sciences* Vol. 1, 2, 473–492.  
doi:10.21042/AMNS.2016.2.00038
6. 2016 [with F. Crespo and F.J. Molero]  
“Poisson and Integrable Systems Through the Nambu Bracket and its Jacobi Multiplier,”  
*Journal of Geometric Mechanics* Vol. 8, 2, 169–178.
7. 2016 [with J.C. van der Meer and F. Crespo]  
“Generalized Hopf fibration and geometric  $SO(3)$  reduction of the 4DOF harmonic oscillator”  
*Reports of Mathematical Physics*, Vol. 77, 2, 239–249.
8. 2016 [with F. Crespo and F. J. Molero]  
“On the  $N$ -Extended Euler System I. Generalized Jacobi Elliptic Functions,”  
*Nonlinear Dynamics*, Vol. 84, 413–435, DOI 10.1007/s11071-016-2633-4
9. 2015 [with F.J. Molero, ]  
Intermediaries for Gravity-Gradient Attitude Dynamics I. Action-angle variables. *Advances in the Astronautical Sciences*, Vol. 153, R.H. Jacobs, Editor, pp. 293-312. American Astronautical Society (AAS), 2015.

10. 2015 [with M. Lara]  
 “Expanding the simple pendulum’s rotation solution in action-angle variables,” *European Journal of Physics* 36 (2015) 055040 (10pp)  
 DOI 10.1088/0143-0807/36/5/055040
11. 2015 [with F. Crespo]  
 “On the extended Euler system and the Jacobi and Weierstrass elliptic functions,” *Journal of Geometric Mechanics* Vol. 7, 2, 151–168,  
 doi:10.3934/jgm.2015.7.151
12. 2014 \* [with F. J. Molero]  
 “Intermediaries for Gravity-Gradient Attitude Dynamics I. Action-Angle Variables,” (2nd IAA Conference on Dynamics and Control of Space Systems DyCoSS 2014, 24-26 March 2014, Rome, Italy) IAA-AAS-DyCoSS2-14-04-05 AAS 14-518.
13. 2014 [with F. Crespo]  
 “Parametric Quartic Hamiltonian Model. A Unified Treatment of Classic Integrable Systems” *Journal of Geometric Mechanics* Vol 6, 4, pp. 479–502.
14. 2014 [with F.J. Molero]  
 “Andoyer Variables and Phases in the Free Rigid Body,” *Journal of Geometric Mechanics* Vol 6, 1, pp. 25–37
15. 2013 [with F.J. Molero, J.C. van der Meer and F.J. Céspedes]  
 “The 2-D Sextic Hamiltonian Oscillator”  
*International Journal of Bifurcations and Chaos* Vol. **23**, Issue 6, pp. 27,  
**DOI:** 10.1142/S021812741330019X
16. 2013 [with M. Lara]  
 “Closed form perturbation solution of a fast rotating triaxial satellite under gravity-gradient torque”, *Cosmic Research* Vol. **51**, Issue 4, 1–15 (en ruso).
17. 2013 [with F.J. Molero, M. Lara and F. Céspedes]  
 “2-D Hamiltonian Duffing oscillator. Elliptic functions from a dynamical systems point of view”, presented at the meeting *Hamiltonian Dynamics and Celestial Mechanics* to honour Prof. Ken Meyer in his 75th year, 30 May – 3 June 2011, Castro Urdiales.  
*Qualitative Theory of Dynamical Systems* Vol. **12**, 115–139; Erratum 140–141  
**DOI:** 10.1007/s12346-012-0081-1
18. 2012 [with M. Lara]  
 “On roto-translatory motion. Reductions and radial intermediaries,”  
*The Journal of the Astronautical Sciences* Vol. **59**, Issue 1-2, 21–39.
19. \* 2012 [with M. Lara]  
 Closed form integration of the Hitzl-Breakwell problem in action-angle variables, *First IAA Conference on Dynamics and Control of Space Systems*, IAA-AAS-DyCoSS1-01-02 (AAS 12-302), Eds. A D Guerman, et al., *Advances in the Astronautical Sciences* Vol **145**, pp. 27–39

20. \* 2012 [with M. Lara]  
Complete Closed Form Solution of a Tumbling Triaxial Satellite Under Gravity-Gradient Torque (AAS 12-119) Paper Presented at 22nd AAS/AIAA Space Flight Mechanics Meeting, Charleston, South Carolina, January 29 February 2, 2012
21. 2011 [with M. Lara and T. Fukushima]  
“Ceres’ Rotation Solution under the Gravitational Torque of the Sun”  
*Monthly Notices Royal Astronomical Society*  
Vol. **415**, 461–469 (2011), (doi:10.1111/j.1365-2966.2011.18717.x)
22. 2011 [with J. Egea and J.C. van der Meer]  
“Bifurcations of the Hamiltonian Fourfold 1:1 Resonance with Toroidal Symmetry,” *The Journal of Nonlinear Science*. **21**, 835–874, (doi: 10.1007/s00332-011-9102-5)
23. 2011 [with M. Lara]  
“Integration of the Euler-Poinsot Problem in New Variables”  
arXiv 1101.0229v1 [nlin.SI] 31 Dec 2010
24. \* 2011 [with M. Lara]  
“Three families of isochrone-type canonical transformations,” Comunicación a *XII Jornadas de Mecánica Celeste*, 1–3 Julio, 2009 Lalín, Pontevedra.  
*Monografías de la Real Academia de Ciencias de Zaragoza* **35**, 41–52.
25. \* 2011 [with M. Lara]  
“On roto-translatory motion. Reductions and radial intermediaries,” (AAS 10-302), K. T. Alfriend Astroynamics Symposium, 17-19 May 2010, Monterey, California.  
*Advances in the Astronautical Sciences* Vol **139**, 21–39, Ed. S. L. Coffey et al.
26. 2010 [S. Ferrer]  
“The Projective Andoyer transformation and the connection between the 4-D isotropic oscillator and Kepler systems,”  
arXiv 1011.3000v1[nlin.SI] 12 Nov 2010
27. \* 2010 [with M. Lara]  
“New Elements for the efficient propagation of attitude dynamics” (IAC-10-C1.3), presented at 61st International Astronautical Congress, 27 September - 1 October, Praga.
28. \* 2010 [with F. J. Molero and M. Lara]  
“Generalized Duffing Oscillator. Perturbation strategies,”  
presentado en Congreso Nolineal, 8-11 Junio, Cartagena.
29. \* 2010 [with M. Lara]  
“On New Sets of Variables in Attitude Dynamics,”  
presented at G. H. Born Symposium, May 13-14, Boulder, Colorado.

30. 2010 [with C. Balsas, E. Jiménez and J.A. Vera]  
 “Topology and periodic orbits of ring-shaped potentials as a generalized 4-D isotropic oscillator,”  
*International Journal of Bifurcations and Chaos*. Vol. **20**, 2809–2821
31. 2010 [with M.Lara]  
 “Families of Canonical Transformations by Hamilton-Jacobi-Poincaré Equation. Application to Rotational and Orbital Dynamics,”  
*Journal of Geometric Mechanics* Vol. **2**, 223–241.
32. 2010 [with M. Lara and T Fukushima]  
 “First-Order Rotation Solution of an Oblate Rigid Body under the Torque of a Perturber in Circular Orbit,”  
*Astronomy and Astrophysics* Vol. **519**, A1 (2010)  
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33. 2010 [with J. Egea, G. Díaz, J.A. Vera y J.C. van der Meer]  
 “Relative Equilibria and Bifurcations in the generalized Van der Waals 4-D Oscillator,” *Physica D* Vol. **239**, 1610–1625.
34. 2010 [with M. Lara]  
 “Integration of the Rotation of an Earth-like Body as a Perturbed Spherical Rotor,”  
*The Astronomical Journal* Vol. **139**, pp. 1899–1908.
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 “Unified treatment for ring-shaped potentials as generalized 4-D isotropic oscillators. Periodic Solutions.”  
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36. 2009 [with M.Lara]  
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*The Journal of the Astronautical Sciences* Vol. **57**, Issue 3, 561–577.
37. \* 2009 [with M.Lara and B. De Saedeleer]  
 “Preliminary design of low lunar orbits,”  
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38. \* 2009 [with M.Lara]  
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41. 2008 [with M. Lara]  
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*Discrete and Continous Dynamical Systems*, Series S, **1**, 293–302.
42. 2007 [with J. Egea y J.C. van der Meer]  
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43. 2007 [with J.F. San-Juan y A. Abad]  
A note on lower bounds for relative equilibria in artificial satellite theory,  
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44. 2007 Unified treatment for ring-shaped potentials as generalized 4-D isotropic oscillators,  
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*Journal of Guidance, Control and Dynamics* **29**, 113–120
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48. \* 2005 [with M. Lara and J.F. San-Juan]  
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53. \* 2003 [with J. Egea and J. Martínez ] *Bifurcaciones y soluciones particulares en la familia 3D- Hénon-Heiles*, *Actas V Jornadas Mecánica Celeste*, Albarracín 20–21 Junio, 2002, Monografías Real Acad. Ciencias, Universidad de Zaragoza, **22**, 27–36.
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