

Curriculum Vitae for Francisco Javier Beron-Vera*

Personal Data

Born 25 October 1970, Buenos Aires, Argentina.
Marital Status Married, two children.
Citizenship Argentine.
U.S. Visa Status Permanent resident (since 2005).
Academic Rank Assistant Scientist
Work Division of Applied Marine Physics
Rosenstiel School of Marine and Atmospheric Science
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Research Interests

Transport and mixing processes in geophysical fluids; geophysical waves and flow stability; geophysical fluid dynamics and thermodynamics.

Summary

	Published	Conditionally Accepted	Submitted	Total
Peer-Reviewed Papers	22	–	2	24
Citations [†] to Peer-Reviewed Papers	71	–	–	71

	PI	Co-PI	Amount Awarded
Research Grants	4	–	\$2,354,500

	Invited	Contributed Oral	Contributed Poster	Total
Seminars	7	5	–	12
Meetings and Workshops	9	30	8	47

	Undergraduate	Graduate	Total
Courses Taught	4	3	7
Thesis Committees	–	1	1

* As of 25 November 2009.

[†] As of 15 January 2009, including no self-citations of any kind.

Education

1997–2001	Sc.D., Physical Oceanography, CICESE, Ensenada, Baja Cfa., Mexico. (Advisor: P. Ripa.‡)
1994–1996	M.Sc., Physical Oceanography, CICESE, Ensenada, Baja Cfa., Mexico. (Advisor: P. Ripa.)
1989–1994	Licentiate, Oceanography, ITBA, Buenos Aires, Argentina. (Advisor: R. Delellis.)

Positions Held

2004–	Assistant Scientist, RSMAS/AMP, U. Miami, FL, USA.
2002–2004	Postdoctoral Research Assoc., RSMAS/AMP, U. Miami, FL, USA. (Advisor: M. G. Brown.)
2001–2002	Postdoctoral Scholar, RSMAS/AMP, U. Miami, FL, USA. (Advisor: M. G. Brown.)
1998–2000	Graduate Research Assistant, CICESE/DOF, Ensenada, Baja Cfa., Mexico.
1997–1998, 2000	Graduate Teaching Assistant, CICESE/DOF, Ensenada, Baja Cfa., Mexico.
1992–1993	Undergraduate Teaching Assistant, ITBA, Buenos Aires, Argentina.

Research Grants Funded

JAN/10–DEC/12	NASA, 09PO090015, <i>Objective Identification and tracking of meso- and submesoscale eddies and filaments, and their role in interbasin, interhemispheric, and regional exchanges</i> . F. J. Beron-Vera (PI); and M. J. Olascoaga and G. J. Goni (Co-PIs). \$528,253.
JAN/09–DEC/09	NASA, NNX09AD82G, <i>Assessing the impact of high-resolution wide-swath altimetry on the determination of the surface ocean Lagrangian circulation</i> . Beron-Vera, F. J. (PI); M. J. Olascoaga and G. Goni (Co-PIs). \$67,000.
SEP/08–AUG/12	NSF, CMG0825547, <i>Collaboration in Mathematical Geosciences: Nonintegrable Hamiltonian systems in geophysical fluid dynamics</i> . Beron-Vera, F. J. (PI); M. J. Olascoaga and H. Koçak (Co-PIs); M. G. Brown (Senior Personnel). \$763,266.
SEP/04–AUG/09	NSF, CMG0417425, <i>Collaboration in Mathematical Geosciences: Nonintegrable Hamiltonian systems in ocean dynamics</i> . Beron-Vera, F. J. (PI); M. J. Olascoaga (co-PI); M. G. Brown and H. Koçak (Senior Personnel). \$995,981.

Fellowships

1999	Grand Combin Summer School Fellowship, Italy.
1997–2000	SNI Graduate Research Fellowship, Mexico.
1994–1996	SRE Graduate Research Fellowship, Mexico.

Professional Service

Editorial	<i>Bentham Open Access Journal Series</i> (advisory board member since 2008).
Reviewal	<i>Atmósfera</i> (2009) <i>Chaos</i> (2009) <i>Journal of Fluid Mechanics</i> (2002) <i>Journal of Geophysical Research</i> (2008–2009) <i>Geophysical Research Letters</i> (2008–2009) <i>Ocean Modelling</i> (1999, 2001) <i>Lagrangian Analysis and Prediction of Coastal and Ocean Dynamics</i> (2004) <i>Nonlinear Processes in Geophysics</i> (2009) NSF - Antarctic Oceans and Atmospheric Sciences Program (2008) NSF - Climate and Large Scale Dynamics Program (2008) NSF - Collaborations in Mathematical Geosciences (2007) NSF - Division of Ocean Sciences (2003, 2005–2006, 2008–2009)

‡Deceased 3 October 2001.

Societies	American Geophysical Union (regular member since 1996). American Meteorological Society (regular member since 2008).
Charing	OS42F, 13th Ocean Sciences Meeting, Honolulu, HI, USA, February 2006.

Teaching Experience

U. Miami	CSC688/MTH686: Scientific Computation. Fall 2006.
CICESE, Mexico	Geophysical Fluid Dynamics. Spring 1997–1998, 2000.
ITBA, Argentina	Classical Mechanics. Spring 1992–1993.

Ph.D. Thesis Committees

I. Udovydchenkov (RSMAS/AMP, U. Miami; now at WHOI/AOP&E)

Field Experience

- 1993 Undergraduate student on the field work “Dinámica Costera en Cabo San Antonio, Río de la Plata” (“Coastal Dynamics at Cape San Antonio, de-la-Plata River”), September.
- 1992 Undergraduate student on the oceanographic cruise “Corrientes de Contorno del Atlántico Sudoccidental” (“Boundary Currents of the SW Atlantic Ocean”), BIO El Austral (R/V Atlantis I), September.

Peer-Reviewed Papers Published

22. **Beron-Vera, F. J.**, M. J. Olascoaga, M. G. Brown, H. Koçak and I. I. Rypina (2009). Invariant-tori-like Lagrangian coherent structures in geophysical flows. *Chaos*, in press. (**Invited** contribution to *Chaos* Focus Issue on Lagrangian coherent structures.)
21. **Beron-Vera, F. J.** and M. G. Brown (2009). Underwater acoustic beam dynamics. *J. Acoust. Soc. Am.* 126, 80–91.
20. **Beron-Vera, F. J.** and M. J. Olascoaga (2009). An assessment of the importance of chaotic stirring and turbulent mixing on the West Florida Shelf. *J. Phys. Oceanogr.* 9, 1743–1755.
19. Olascoaga, M. J., **F. J. Beron-Vera**, L. E. Brand and H. Koçak (2008). Tracing the early development of harmful algal blooms on the West Florida Shelf with the aid of Lagrangian coherent structures. *J. Geophys. Res.* 113, C12014, doi:10.1029/2007JC004533.
18. **Beron-Vera, F. J.**, M. G. Brown, M. J. Olascoaga, I. I. Rypina, H. Koçak and I. A. Udovydchenkov (2008). Zonal jets as transport barriers in planetary atmospheres. *J. Atmos. Sci.* 65, 3316–3326.
17. **Beron-Vera, F. J.**, M. J. Olascoaga and G. J. Goni (2008). Oceanic mesoscale eddies as revealed by Lagrangian coherent structures. *Geophys. Res. Lett.* 35, L12603, doi:10.1029/2008GL033957.
16. Rypina, I. I., **F. J. Beron-Vera**, M. G. Brown, H. Kocak, M. J. Olascoaga and I. A. Udovydchenkov (2007). On the Lagrangian dynamics of atmospheric zonal jets and the impermeability of the stratospheric polar vortex. *J. Atmos. Sci.* 64, 3595–3610.
15. Rypina, I. I., M. G. Brown, **F. J. Beron-Vera**, H. Koçak, M. J. Olascoaga and I. A. Udovydchenkov (2007). Robust transport barriers resulting from strong Kolmogorov–Arnold–Moser stability. *Phys. Rev. Lett.*, 98, 104102.
14. Olascoaga, M. J., I. I. Rypina, M. G. Brown, **F. J. Beron-Vera**, H. Koçak, L. E. Brand, G. R. Halliwell and L. K. Shay (2006). Persistent transport barrier on the West Florida Shelf. *Geophys. Res. Lett.* 33, L22603, doi:10.1029/2006GL027800.
13. Brown, M. G., **F. J. Beron-Vera**, I. Rypina and I. A. Udovydchenkov (2005). Rays, modes, wavefield structure and wavefield stability. *J. Acoust. Soc. Am.* 117, 1607–1610.
12. **Beron-Vera, F. J.**, M. J. Olascoaga and J. Zavala-Garay (2004). Linear waves and baroclinic instability in a inhomogeneous-density layered primitive-equation ocean model. *ICTAM04 Abstract Book and CD-ROM Proceedings*, ISBN 83-89687-01-1, IPPT PAN, Warsaw (e-Print arXiv:physics/0401078).
11. **Beron-Vera, F. J.** and M. G. Brown (2004). Travel time stability in weakly range-dependent sound channels. *J. Acoust. Soc. Am.* 115, 1068–1077.

10. **Beron-Vera, F. J.**, M. J. Olascoaga and M. G. Brown (2004). Passive tracer patchiness and particle trajectory stability in incompressible two-dimensional flows. *Nonlin. Processes Geophys.* 11, 67–74. (**Invited** contribution to *Nonlin. Processes Geophys.* Special Issue dedicated to Prof. A. D. Kirwan Jr. on the occasion of his 70th birthday.)
9. Olascoaga, M. J., **F. J. Beron-Vera** and J. Sheinbaum (2003). Deep ocean influence on upper ocean baroclinic instability saturation, in O. U. Velasco-Fuentes et al. (eds.). *Nonlinear Processes in Geophysical Fluid Dynamics: A Tribute to the Scientific Work of Pedro Ripa*, Kluwer Academic, pp. 15–28 (e-Print arXiv:physics/0307142).
8. **Beron-Vera, F. J.** (2003). Constrained Hamiltonian shallow-water dynamics on the sphere, in O. U. Velasco-Fuentes et al. (eds.). *Nonlinear Processes in Geophysical Fluid Dynamics: A Tribute to the Scientific Work of Pedro Ripa*, Kluwer Academic, pp. 29–51 (e-Print arXiv:physics/0307141).
7. **Beron-Vera, F. J.**, M. G. Brown, J. Colosi, S. Tomsovic, A. L. Virovlyansky, M. A. Wolfson and G. M. Zaslavsky (2003). Ray dynamics in a long-range acoustic propagation experiment. *J. Acoust. Soc. Am.* 14, 1226–1242.
6. **Beron-Vera, F. J.** and M. G. Brown (2003). Ray stability in weakly range-dependent sound channels. *J. Acoust. Soc. Am.* 114, 123–130.
5. **Beron-Vera, F. J.** and M. J. Olascoaga (2003). Spectral, formal, and nonlinear stability in a layered quasigeostrophic model with application to the Atlantic North Equatorial Current. in G. J. Goni and P. Malanotte-Rizzoli (eds.), *Interhemispheric Water Exchange in the Atlantic Ocean*, Elsevier Oceanography Series 68, Elsevier Science, pp. 313–334.
4. **Beron-Vera, F. J.** and P. Ripa (2002). Seasonal salinity balance in the Gulf of California. *J. Geophys. Res.* 107(C8):10.1029/2000JC000769.
3. **Beron-Vera, F. J.** and P. Ripa (2000). Three-dimensional aspects of the seasonal heat balance in the Gulf of California. *J. Geophys. Res.* 105, 11441–11457.
2. **Beron-Vera, F. J.**, J. Ochoa and P. Ripa (1999). A note on boundary conditions for salt and freshwater balances. *Ocean Modell.* 1, 111–118.
1. **Beron-Vera, F. J.** and P. Ripa (1997). Free boundary effects on baroclinic instability. *J. Fluid Mech.* 352, 245–264.

Peer-Reviewed Papers Submitted

3. **Beron-Vera, F. J.** (2009). Mixing by high- and low-resolution surface ocean currents. *J. Geophys. Research.*
2. **Beron-Vera, F. J.**, M. J. Olascoaga and G. J. Goñi (2009). Surface ocean mixing inferred from multisatellite altimetry measurements. *Marine Geodesy.*
1. Reniers, A. J. H. M., J. H. MacMahan, **F. J. Beron-Vera** and M. J. Olascoaga (2009). Rip-current pulses tied to Lagrangian coherent structures. *Geophys. Res. Letters.*

Papers in Preparation

2. **Beron-Vera, F. J.** (2009). Quasiperiodically dancing tori.
1. **Beron-Vera, F. J.** (2009). Use of coarse-grained velocities to detect invariant-tori-like Lagrangian coherent structures. *Phys. Fluids.*

Unpublished Work

2. **Beron-Vera, F. J.** (2004). A didactic approach to linear waves in the ocean (e-Print arXiv:physics/0401035).
1. **Beron-Vera, F. J.** (2003). Multilayer primitive-equation ocean model with variable vertical shear and stratification within each layer (e-Print arXiv:physics/0312083).

Thesis Work

3. **Beron-Vera, F. J.** (2001). *Termodinámica del Golfo de California (Thermodynamics of the Gulf of California)*. Sc.D. thesis, CICESE, Ensenada, Baja Cfa., Mexico.
2. **Beron-Vera, F. J.** (1996). *Efectos de una frontera libre en inestabilidad baroclínica (Effects of a Free Boundary on Baroclinic Instability)*. M.Sc. thesis, CICESE, Ensenada, Baja Cfa., Mexico.

1. **Beron-Vera, F. J.** (1994). *Un formalismo unificado para la descripción de fenómenos ondulatorios de interés geofísico (A Unified Mathematical Formalism for the Description of Wave Phenomena of Geophysical Interest)*. Licentiate thesis, ITBA, Buenos Aires, Argentina.

Seminars

12. Strong KAM stability in planetary atmospheres. College of Marine and Earth Studies, University of Delaware, Newark, DE, April. **Invited.**
11. Zonal jets as transport barriers in planetary atmospheres: An application of KAM theory for Hamiltonians with degeneracy. Georgia Tech/CDSNS, Atlanta, GA, August. **Invited.**
10. Zonal jets as transport barriers in geophysical flows. Department of Physics and Physical Oceanography, UNCW, Wilmington, NC, April. **Invited.**
9. Detección del origen de mareas rojas mediante estructuras lagrangianas coherentes (Tracing the origin of red tides using Lagrangian coherent structures). CENPAT, Puerto Madryn, Chubut, Argentina, July 2007.
8. Nonintegrable Hamiltonian dynamical systems: An application to transport and mixing in planetary atmospheres. Dept. of Physics, U. Louisville, Louisville, KY, USA, June 2007. **Invited.**
7. Zonal jets as transport barriers in planetary atmospheres. Dept. of Physics, U. Toronto, Toronto, M5S, Canada, June 2007. **Invited.**
6. Hamiltonian patchiness. RSMAS/AMP, U. Miami, Miami, FL, USA, March 2005.
5. Ray and travel time stability in weakly range-dependent sound channels. WHOI/AOP&E, Woods Hole, MA, USA, May 2003. **Invited.**
4. Patchiness and particle stability in gyre flows. WHOI/PO, Woods Hole, MA, USA, May 2003. **Invited.**
3. Seasonal salinity balance of the Gulf of California. RSMAS/MPO, U. Miami, Miami, FL, USA, April 2001.
2. Termodinámica del Golfo de California (Thermodynamics of the Gulf of California). CICESE, Ensenada, Baja Cfa., Mexico, May 2000.
1. Free boundary effects on baroclinic instability. Part I: Continuously stratified model on the f -plane. Grand Combin Summer School in Geophysical and Astrophysical Fluid Dynamics on “Transport and Mixing in Geophysical Flows,” St. Oyen, Aosta, Italy, June 1999.

Meetings and Workshops

47. **Beron-Vera, F. J.**, M. J. Olascoaga, M. G. Brown, H. Koçak and I. I. Rypina (2009). Invariant-tori-like Lagrangian coherent structures: An application to geophysical flows. Workshop on New Direction on Dynamical Systems, Lorentz Center, Leiden, The Netherlands, December. **Invited.**
46. **Beron-Vera, F. J.**, M. J. Olascoaga and G. J. Goni (2009). Assessing the impact of high-resolution wide-swath altimetry on Lagrangian circulation determination. Ocean Surface Topography Science Team Meeting, Seattle, WA, USA, June.
45. Brown, M. G., **F. J. Beron-Vera**, I. A. Udovydchenkov and I. I. Rypina. Coherence in long-range deep ocean propagation. *J. Acoust. Soc. Am.* 125(4): 2491. 157th Meeting of the Acoustical Society of America, Portland, OR, USA, May. **Invited.**
44. **Beron-Vera, F. J.**, M. J. Olascoaga and M. G. Brown (2009). Strong KAM stability in the summer hemisphere subtropical stratosphere, *Geophysical Research Abstracts* 11, EGU2009-9621, EGU General Assembly, Vienna, Austria, April.
43. Olascoaga, M. J., **F. J. Beron-Vera**, L. E. Brand and H. Kocak (2009). An application of Lagrangian coherent structures to harmful algal blooms, *Geophysical Research Abstracts* 11, EGU2009-10515, EGU General Assembly, Vienna, Austria, April. **Invited.**
42. **Beron-Vera, F. J.**, M. G. Brown, M. J. Olascoaga, I. I. Rypina, H. Koçak and I. A. Udovydchenkov (2008). Zonal jets as transport barriers in planetary atmospheres: An application of KAM theory for Hamiltonians with degeneracy. Workshop on KAM Theory and its Applications, Lorentz Center, Leiden, The Netherlands, December. **Invited.**

41. **Beron-Vera, F. J.**, M. J. Olascoaga and G. J. Goni (2008). Revealing mesoscale eddies using Lagrangian coherent structures. Ocean Surface Topography Science Team Meeting, Nice, France, November.
40. **Beron-Vera, F. J.**, M. G. Brown, M. J. Olascoaga, I. I. Rypina, H. Koçak and I. A. Udovydchenkov (2008). Zonal jets as transport barriers in planetary atmospheres. Workshop on Nonlinear Processes in Oceanic and Atmospheric Flows, Castro Urdiales, Cantabria, Spain, July.
39. Olascoaga, M. J., and **F. J. Beron-Vera** (2008). Stirring and mixing in the West Florida Shelf. Workshop on Nonlinear Processes in Oceanic and Atmospheric Flows, Castro Urdiales, Cantabria, Spain, July.
38. Olascoaga, M. J., and **F. J. Beron-Vera** (2008). On the nature of the surface ocean Lagrangian dynamics in the West Florida Shelf. *Eos Trans. AGU* 89(23), Jt. Assem. Suppl., Abstract OS34A-02, Fort Lauderdale, USA, May. **Invited.**
37. **Beron-Vera, F. J.**, M. J. Olascoaga and G. J. Goni (2008). Mesoscale vortices as revealed by Lagrangian coherent structures. *Eos Trans. AGU* XX(X), Ocean Sci. Meet. Suppl., Abstract XXXX, Orlando, FL, March.
36. Olascoaga, M. J., **F. J. Beron-Vera**, L. E. Brand and H. Koçak (2008). An application of Lagrangian coherent structures to harmful algal blooms. *Eos Trans. AGU* XX(X), Ocean Sci. Meet. Suppl., Abstract XXXX, Orlando, FL, USA, March.
35. **Beron-Vera, F. J.**, M. G. Brown, M. J. Olascoaga, I. I. Rypina, H. Koçak and I. A. Udovydchenkov (2007). Zonal jets as transport barriers in planetary atmospheres. *Eos Trans. AGU* 88(52), Fall Meet. Suppl., Abstract P51A-0202, San Francisco, CA, December.
34. Rypina, I. I., M. G. Brown, **F. J. Beron-Vera**, H. Kocak, M. J. Olascoaga and I. A. Udovydchenkov (2007). On the Lagrangian dynamics of atmospheric zonal jets and the impermeability of the stratospheric polar vortex. *Eos Trans. AGU* 88(52), Fall Meet. Suppl., Abstract A51F-11, San Francisco, CA, December.
33. **Beron-Vera, F. J.**, M. J. Olascoaga, I. I. Rypina, M. G. Brown, H. Koçak and I. A. Udovydchenkov (2007). On the Lagrangian dynamics of atmospheric zonal jets and the permeability of the stratospheric polar vortex. AGU Chapman Conference on “The Role of the Stratosphere in Climate and Climate Change,” Santorini, Greece, September.
32. **Beron-Vera, F. J.**, and M. G. Brown, (2006). A partial theory of phase coherence loss in deep ocean propagation, *J. Acoust. Soc. Am.* 120: 3062, 4th Joint Meeting of the Acoustical Society of America and the Acoustical Society of Japan, Honolulu, HI, USA, November.
31. **Beron-Vera, F. J.**, and M. G. Brown (2006). Simulations of phase coherence loss. 9th NPAL Analysis Workshop, Borrego Springs, CA, USA, May.
30. Olascoaga, M. J. and **F. J. Beron-Vera** (2006). Fluid particle clustering as a mechanism for plankton patchiness. *Eos Trans. AGU* 87(36), Ocean Sci. Meet. Suppl., Abstract OS36H-06, Honolulu, HI, USA, February.
29. **Beron-Vera, F. J.** and M. J. Olascoaga (2006). Nonlinear evolution of baroclinically unstable near-surface zonal jets. *Eos Trans. AGU* 87(36), Ocean Sci. Meet. Suppl., Abstract OS45L-02, Honolulu, HI, USA, February.
28. **Beron-Vera, F. J.**, and M. G. Brown (2005). Underwater acoustic beam dynamics. 8th NPAL Analysis Workshop, Blaine, WA, USA, May.
27. Brown, M. G., **Beron-Vera, F. J.**, I. Rypina and I. A. Udovydchenkov (2004). Alpha, beta, and wave-field statistics. *J. Acoust. Soc. Am.* 116, 2609, 148th Meeting of the Acoustical Society of America, San Diego, CA, USA, November. **Invited.**
26. Udovydchenkov, I. A., Rypina, I., M. G. Brown and **F. J. Beron-Vera** (2004). A very simple transformation of the environment significantly reduces Thomson–Chapman PE phase errors. *J. Acoust. Soc. Am.* 116, 2635, 148th Meeting of the Acoustical Society of America, San Diego, CA, USA, November.
25. Rypina, I., I. A. Udovydchenkov, M. G. Brown and **F. J. Beron-Vera** (2004). A simple transformation of the environment eliminates standard PE phase errors. *J. Acoust. Soc. Am.* 116, 2635, 148th Meeting of the Acoustical Society of America, San Diego, CA, USA, November.
24. **Beron-Vera, F. J.**, M. G. Brown and I. Rypina and I. A. Udovydchenkov (2004). Acoustic beam dynamics in deep ocean environments. *J. Acoust. Soc. Am.* 116, 2609, 148th Meeting of the Acoustical Society of America, San Diego, CA, USA, November.
23. **Beron-Vera, F. J.**, M. G. Brown and M. J. Olascoaga (2004). Sistemas hamiltonianos no integrables en física oceánica (Nonintegrable Hamiltonian systems in ocean physics), XXVII Congreso Nacional de la Sociedad Matemática

- Mexicana (27th National Congress of the Mexican Mathematical Society), Ensenada, Baja Cfa., Mexico, October. **Invited.**
22. **Beron-Vera, F. J.**, M. J. Olascoaga and J. Zavala-Garay (2004). Linear waves and baroclinic instability in a inhomogeneous-density layered primitive-equation ocean model. 21st International Congress of Theoretical and Applied Mechanics (ICTAM), Warsaw, Poland, August. **Invited.**
 21. **Beron-Vera, F. J.** and M. G. Brown (2004). Ray and travel time stability in weakly range-dependent sound channels. *J. Acoust. Soc. Am.* 115 2,579, 147th Meeting of the Acoustical Society of America, New York, NY, USA, May.
 20. Brown, M. G., **F. J. Beron-Vera**, I. Rypina and I. Udovydchenkov (2004). Wavefield stability in weakly range-dependent sound channels. *J. Acoust. Soc. Am.* 115, 2579, 147th Meeting of the Acoustical Society of America, New York, NY, USA, May.
 19. Brown, M. G., **F. J. Beron-Vera**, I. Udovydchenkov and I. Rypina (2004). 30 years of progress? 7th NPAL Analysis Workshop, Borrego Springs, CA, USA, March.
 18. **Beron-Vera, F. J.**, M. J. Olascoaga and J. Zavala-Garay (2004). How much can we do with only a few layers? 2004 Layered Ocean Model's Users Workshop, Miami, FL, USA, February.
 17. **Beron-Vera, F. J.** and M. G. Brown (2003). Ray amplitude and travel time statistics are controlled by the background sound speed structure. 6th NPAL Analysis Workshop, Borrego Springs, CA, USA, March.
 16. Brown, M. G. and **F. J. Beron-Vera** (2003). The beginnings of a theory of Wave Propagation in Random Inhomogeneous Media. 6th NPAL Analysis Workshop, Borrego Springs, CA, USA, March.
 15. **Beron-Vera, F. J.**, M. J. Olascoaga and M. G. Brown (2002). Particle trajectory stability and tracer patchiness in incompressible 2D flows. 2nd LAPCOD Meeting, Key Largo, FL, USA, December.
 14. Brown, M. G., **F. J. Beron-Vera**, J. Colosi, S. Tomsovic, A. L. Virovlyansky, M. A. Wolfson and G. M. Zaslavsky (2003). Ray dynamics in underwater ocean acoustics, 5th Workshop on Nonlinear Dynamics and Chaos. Courant Institute of Mathematical Sciences, NYU, New York, NY, October.
 13. Olascoaga, M. J. and **F. J. Beron-Vera** (2002). Baroclinic instability in a three-layer quasigeostrophic model with application to the Atlantic North Equatorial Current. Pedro Ripa Memorial Colloquium on "Nonlinear Processes in Geophysical Fluid Dynamics," Ensenada, Baja Cfa., Mexico, October. **Invited.** (Presented by J. Sheinbaum.)
 12. **Beron-Vera, F. J.** and M. G. Brown (2002). The influence of background sound speed structure on ray stability. 5th NPAL Analysis Workshop, La Jolla, CA, USA, August.
 11. **Beron-Vera, F. J.** and M. G. Brown (2001). On the importance of background sound speed structure on ray stability. 4th NPAL Analysis Workshop, Borrego Springs, CA, USA, November.
 10. Brown, M. G. and **F. J. Beron-Vera** (2001). Time spreads, timefront stability and the apex approximation. 4th NPAL Analysis Workshop, Borrego Springs, CA, USA, November.
 9. Ripa, P., M. J. Olascoaga and **F. J. Beron-Vera** (2001). Generalization of the classical baroclinic instability problems. Waves Phenomena III: Waves in Fluids from the Microscopic to the Planetary Scale, Edmonton, Canada, June.
 8. **Beron-Vera, F. J.** and P. Ripa (2000). Modelo hamiltoniano balanceado para aguas someras en coordenadas esféricas (Hamiltonian balance model for shallow water in spherical coordinates). *Bol. Soc. Mex. Fís.* 14(3), 152, XXXIX Congreso Nacional de la Sociedad Mexicana de Física (39th National Congress of the Mexican Physical Society), Puebla, Pue., Mexico, October.
 7. **Beron-Vera, F. J.** and P. Ripa (2000). Seasonal mass balance in the Gulf of California. *Eos Trans. AGU* 80(49), Ocean Sci. Meet. Suppl., Abstract OS33, San Antonio, TX, USA, January.
 6. **Beron-Vera, F. J.** and P. Ripa (1998). Balances de calor y sal en el Golfo de California (Heat and salt balances in the Gulf of California). *GEOS* 18 277, Reunión Anual de la UGM (UGM Annual Meeting), Puerto Vallarta, Jal., Mexico, November.
 5. **Beron-Vera, F. J.**, E. Beier and P. Ripa (1998). Dinámica y termodinámica del Golfo de California en la escala anual (Dynamics and thermodynamics of the Gulf of California at the annual scale). XIX Congreso Nacional de Oceanografía (11th National Congress of Oceanography), Ensenada, Baja Cfa., Mexico, April.
 4. Beier, E., **F. J. Beron-Vera** and P. Ripa (1998). Balance de calor anual en el Golfo de California (Annual heat balance in Gulf of California). XIX Congreso Nacional de Oceanografía (11th National Congress of Oceanography), Ensenada, Baja Cfa., Mexico, April.

3. **Beron-Vera, F. J.** and P. Ripa (1998). Free boundary effects on baroclinic instability, *Eos Trans. AGU* 79(1), Ocean Sci. Meet. Suppl., Abstract OS57, San Diego, CA, USA, February.
2. **Beron-Vera, F. J.** and P. Ripa (1997). Una descripción simplificada de la dinámica y termodinámica del Golfo de California (A simplified description of the dynamics and thermodynamics of the Gulf of California). *GEOS* 17 239, Reunión Anual de la UGM (UGM Annual Meeting), Puerto Vallarta, Jal., Mexico, November.
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