



Nombres:

**VÍCTOR HUGO**

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Título Profesional o Grado Académico (incluya el año de obtención):

**LICENCIATURA EN CIENCIAS C/M EN FÍSICA, UNIVERSIDAD DE CHILE  
1992.**

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Estudios de Postgrado o Especialización (institución donde lo obtuvo y año de obtención):

**DOCTOR EN FÍSICA, UNIVERSIDAD DE CHILE 1998.**

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Actividad Actual e Institución en la cual trabaja:

**PROFESOR ASISTENTE DE LA UNIVERSIDAD DE CHILE.  
DEPARTAMENTO DE FÍSICA, FACULTAD DE CIENCIAS. CONSEJERO DE  
FACULTAD. SOCIO ACTIVO DE LA SOCIEDAD CHILENA DE FÍSICA.**

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Reseña de su actividad laboral actual:

**Área de Investigación:** Física de Plasmas, Sistemas Complejos

**Línea de Investigación:** Propagación de ondas, efectos no lineales y complejidad en plasmas, complejidad y caos en tránsito en ciudades, flujo peatonal y sismos, redes complejas

**Docencia:** Mecánica, Introducción a la Física de Plasmas (postgrado)

**PUBLICACIONES INDEXADAS:**

Moya, P.S., Navarro, R., Muñoz, V., Valdivia, J.A.  
Comment on "sensitive test for ion-cyclotron resonant heating in the solar wind"  
(2013) Physical Review Letters, 111 (2), art. no. 029001, .  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84880126432&partnerID=40&md5=6dd4da455c6c158a092b3f5608b32a3f>  
DOCUMENT TYPE: Article  
SOURCE: Scopus

Valdivia, J.A., Rogan, J., Muñoz, V., Toledo, B.A., Stepanova, M.  
The magnetosphere as a complex system  
(2013) Advances in Space Research, 51 (10), pp. 1934-1941.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84876409231&partnerID=40&md5=9d239fceb33a8e93ace2d90d91b02b1c>  
DOCUMENT TYPE: Article  
SOURCE: Scopus

Toledo, B.A., Sanjuan, M.A.F., Muñoz, V., Rogan, J., Valdivia, J.A.  
Non-smooth transitions in a simple city traffic model analyzed through supertracks  
(2013) Communications in Nonlinear Science and Numerical Simulation, 18 (1), pp. 81-88.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84865662963&partnerID=40&md5=1566f81f8690ccd63ec077493cc51aa8>  
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López, R.A., Asenjo, F.A., Muñoz, V., Valdivia, J.A.  
Parametric decays in relativistic magnetized electron-positron plasmas with relativistic temperatures  
(2012) 39th EPS Conference on Plasma Physics 2012, EPS 2012 and the 16th International Congress on Plasma Physics, 2, pp. 1054-1057.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84876903671&partnerID=40&md5=b48aa7584fc8213ec5651c03776282c3>  
DOCUMENT TYPE: Conference Paper  
SOURCE: Scopus

Domínguez, M., Muñoz, V., Valdivia, J.A.  
Study of the temporal evolution of complexity in the sun-earth system  
(2012) 39th EPS Conference on Plasma Physics 2012, EPS 2012 and the 16th International Congress on Plasma Physics, 2, pp. 1070-1073.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84876924786&partnerID=40&md5=bafa9f6809130d99a3549b194bcc8da1>  
DOCUMENT TYPE: Conference Paper  
SOURCE: Scopus

Asenjo, F.A., Borotto, F.A., Chian, A.C.-L., Muñoz, V., Valdivia, J.A., Rempel, E.  
Envelope solitons in a weakly magnetized electron-positron plasma with relativistic temperature  
(2012) 39th EPS Conference on Plasma Physics 2012, EPS 2012 and the 16th International Congress on Plasma Physics, 2, pp. 1078-1081.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84876896426&partnerID=40&md5=cf099e6f94fee9eac5e8a3276483e5b3>  
DOCUMENT TYPE: Conference Paper  
SOURCE: Scopus

Pastén, D., Muñoz, V., Toledo, B., Villalobos, J., Zarama, R., Rogan, J., Valdivia, J.A.  
Universal behavior in a model of city traffic with unequal green/red times  
(2012) *Physica A: Statistical Mechanics and its Applications*, 391 (21), pp. 5230-5243.  
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DOCUMENT TYPE: Article  
SOURCE: Scopus

Moya, P.S., Viñas, A.F., Muñoz, V., Valdivia, J.A.  
Computational and theoretical study of the wave-particle interaction of protons and waves  
(2012) *Annales Geophysicae*, 30 (9), pp. 1361-1369.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84867547926&partnerID=40&md5=894ac2ffc75a9a787f1478448400cf63>  
DOCUMENT TYPE: Article  
SOURCE: Scopus

López, R.A., Asenjo, F.A., Muñoz, V., Alejandro Valdivia, J.  
Parametric decays in relativistic magnetized electron-positron plasmas with relativistic temperatures  
(2012) *Physics of Plasmas*, 19 (8), art. no. 082104, .  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84865714273&partnerID=40&md5=bff1c02c096be59fec24c8138509dd9b>  
DOCUMENT TYPE: Article  
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Domínguez, M., Muñoz, V., Valdivia, J.A.  
Thermal effects on the propagation of large-amplitude electromagnetic waves in magnetized relativistic electron-positron plasma  
(2012) *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics*, 85 (5), art. no. 056416, .  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84862012400&partnerID=40&md5=08b8fb9f87200ab46d3c673c24a970f3>  
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Asenjo, F.A., Borotto, F.A., Chian, A.C.-L., Muñoz, V., Valdivia, J.A., Rempel, E.L.  
Self-modulation of nonlinear waves in a weakly magnetized relativistic electron-positron plasma with temperature  
(2012) *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics*, 85 (4), art. no. 046406, . Cited 2 times.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84859533004&partnerID=40&md5=b9a2b76705b09eb58cf1f090f4b00385>  
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Pastén, D., Muñoz, V., Cisternas, A., Rogan, J., Valdivia, J.A.  
Monofractal and multifractal analysis of the spatial distribution of earthquakes in the central zone of Chile  
(2011) *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics*, 84 (6), art. no. 066123, . Cited 2 times.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-84855310001&partnerID=40&md5=b2565006a5ae15887ebb51abca13a03a>  
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Abe, S., Pastén, D., Muñoz, V., Suzuki, N.  
Universalities of earthquake-network characteristics  
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<http://www.scopus.com/inward/record.url?eid=2-s2.0-82555202516&partnerID=40&md5=f4c423b772944e6c2090b580fe1bb16f>  
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Moya, P.S., Muñoz, V., Rogan, J., Valdivia, J.A.  
Study of the cascading effect during the acceleration and heating of ions in the solar wind  
(2011) Journal of Atmospheric and Solar-Terrestrial Physics, 73 (11-12), pp. 1390-1397. Cited 2 times.  
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Asenjo, F.A., Muñoz, V., Valdivia, J.A.  
Relativistic mass and charge of photons in thermal plasmas through electromagnetic field quantization  
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Villalobos, J., Toledo, B.A., Pastén, D., Muñoz, V., Rogan, J., Zarama, R., Lammoglia, N., Valdivia, J.A.  
Characterization of the nontrivial and chaotic behavior that occurs in a simple city traffic model.  
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Villalobos, J., Toledo, B.A., Pastén, D., Muñoz, V., Rogan, J., Zarama, R., Lammoglia, N., Valdivia, J.A.  
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Varas, A., Cornejo, M.D., Toledo, B.A., Muñoz, V., Rogan, J., Zarama, R., Valdivia, J.A.  
Resonance, criticality, and emergence in city traffic investigated in cellular automaton models

(2009) Physical Review E - Statistical, Nonlinear, and Soft Matter Physics, 80 (5), art. no. 056108, . Cited 4 times.

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[71449118322&partnerID=40&md5=a5b31f7a80eac0caee29acb5f8fc1f9e](http://www.scopus.com/inward/record.url?eid=2-s2.0-71449118322&partnerID=40&md5=a5b31f7a80eac0caee29acb5f8fc1f9e)

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Lammoglia, N., Muñoz, V., Rogan, J., Toledo, B., Zarama, R., Valdivia, J.A.

Quantitative description of realistic wealth distributions by kinetic trading models

(2008) Physical Review E - Statistical, Nonlinear, and Soft Matter Physics, 78 (4), art. no. 047103, . Cited 2 times.

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[55849110002&partnerID=40&md5=f6e015750f2c96164aad3f8e275bdf3](http://www.scopus.com/inward/record.url?eid=2-s2.0-55849110002&partnerID=40&md5=f6e015750f2c96164aad3f8e275bdf3)

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Varas, A., Cornejo, M.D., Mainemer, D., Toledo, B., Rogan, J., Muñoz, V., Valdivia, J.A.

Cellular automaton model for evacuation process with obstacles

(2007) Physica A: Statistical Mechanics and its Applications, 382 (2), pp. 631-642.

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Wastavino, L.A., Toledo, B.A., Rogan, J., Zarama, R., Muñoz, V., Valdivia, J.A.

Modeling traffic on crossroads

(2007) Physica A: Statistical Mechanics and its Applications, 381 (1-2), pp. 411-419.

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Toledo, B.A., Cerda, E., Rogan, J., Muñoz, V., Tenreiro, C., Zarama, R., Valdivia, J.A.

Universal and nonuniversal features in a model of city traffic

(2007) Physical Review E - Statistical, Nonlinear, and Soft Matter Physics, 75 (2), art. no. 026108, . Cited 43 times.

[http://www.scopus.com/inward/record.url?eid=2-s2.0-](http://www.scopus.com/inward/record.url?eid=2-s2.0-33847380621&partnerID=40&md5=26a0c66199841f17274a4d7d09b9ee40)

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SOURCE: Scopus

Muñoz, V., Hada, T., Matsukiyo, S.

Kinetic effects on the parametric decays of Alfvén waves in relativistic pair plasmas

(2006) Earth, Planets and Space, 58 (9), pp. 1213-1217. Cited 4 times.

[http://www.scopus.com/inward/record.url?eid=2-s2.0-](http://www.scopus.com/inward/record.url?eid=2-s2.0-33750629498&partnerID=40&md5=dfd11b721d1deb8ae53a40867a4e1cd6)

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Muñoz, V.

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(2006) Nonlinear Processes in Geophysics, 13 (2), pp. 237-241. Cited 17 times.

<http://www.scopus.com/inward/record.url?eid=2-s2.0-3374555018&partnerID=40&md5=7529b4c62ff96a2a40f0282b24715be6>  
DOCUMENT TYPE: Review  
SOURCE: Scopus

Valdivia, J.A., Rogan, J., Muñoz, V., Toledo, B.  
Hysteresis provides self-organization in a plasma model  
(2006) Space Science Reviews, 122 (1-4), pp. 313-320. Cited 5 times.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-33749037430&partnerID=40&md5=d5025ae04b6719f8ac862203804806d2>  
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SOURCE: Scopus

Valdivia, J.A., Rogan, J., Muñoz, V., Gomberoff, L., Klimas, A., Vassiliadis, D., Uritsky, V., Sharma, S., Toledo, B., Wastavino, L.  
The magnetosphere as a complex system  
(2005) Advances in Space Research, 35 (5), pp. 961-971. Cited 8 times.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-20744442772&partnerID=40&md5=61ab53ea7af3c7a1bb2f91b6e9196016>  
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Toledo, B.A., Muñoz, V., Rogan, J., Tenreiro, C., Valdivia, J.A.  
Erratum: Modeling traffic through a sequence of traffic lights (Physical Review E (2004) 70 (016107))  
(2004) Physical Review E - Statistical, Nonlinear, and Soft Matter Physics, 70 (3 2), art. no. 039901, pp. 039901-1.  
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Toledo, B.A., Muñoz, V., Rogan, J., Tenreiro, C., Valdivia, J.A.  
Modeling traffic through a sequence of traffic lights  
(2004) Physical Review E - Statistical, Nonlinear, and Soft Matter Physics, 70 (1 2), art. no. 016107, pp. 016107-1-016107-6. Cited 77 times.  
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Muñoz, V.  
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(2004) Physics of Plasmas, 11 (7), pp. 3497-3501. Cited 6 times.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-3142667613&partnerID=40&md5=051650e00f3db602181a14abe5226924>  
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Gomberoff, L., Muñoz, V., Valdivia, J.A.  
Ion cyclotron instability triggered by drifting minor ion species: Cascade effect and exact results  
(2004) Planetary and Space Science, 52 (8), pp. 679-684. Cited 3 times.

<http://www.scopus.com/inward/record.url?eid=2-s2.0-2342537056&partnerID=40&md5=52e0804b64ec1df830da8476013d4d62>  
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Muñoz, V., Gomberoff, L.  
Kinetic effects on parametric decays of circularly polarized electromagnetic waves in an electron-positron plasma  
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Muñoz, V., Gomberoff, L.  
Kinetic effects on the parametric decays of circularly polarized electromagnetic waves in an electron-positron plasma  
(2002) *Physics of Plasmas*, 9 (6), p. 2534. Cited 3 times.  
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Muñoz, V., Gomberoff, L.  
Electro-acoustic damping effects on the parametric decays of electromagnetic waves in electron-positron plasmas  
(2000) *Physics of Plasmas*, 7 (12), pp. 4916-4922. Cited 1 time.  
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Muñoz, V., Gomberoff, L.  
Parametric decays of a circularly polarized electromagnetic wave in an electron-positron plasma  
(1998) *Physics of Plasmas*, 5 (9), pp. 3171-3179. Cited 10 times.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-0038639804&partnerID=40&md5=270f056e8ec2f7431d50c5988ee5b1cd>  
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Muñoz, V., Gomberoff, L.  
Parametric decays of a circularly polarized electromagnetic wave in an electron-positron magnetized plasma  
(1998) *Physical Review E - Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics*, 57 (1), pp. 994-1004. Cited 10 times.  
<http://www.scopus.com/inward/record.url?eid=2-s2.0-4244034004&partnerID=40&md5=e66902dceddc1b49a2ffff382c8cc275>  
DOCUMENT TYPE: Article  
SOURCE: Scopus

Gomberoff, L., Muñoz, V., Galvão, R.M.O.  
Parametric decays of a linearly polarized electromagnetic wave in an electron-positron plasma

(1997) Physical Review E - Statistical Physics, Plasmas, Fluids, and Related Interdisciplinary Topics, 56 (4), pp. 4581-4590. Cited 12 times.

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[0031244639&partnerID=40&md5=554ebd20b42eaccd64984e1d69d6884d](http://www.scopus.com/inward/record.url?eid=2-s2.0-0031244639&partnerID=40&md5=554ebd20b42eaccd64984e1d69d6884d)

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Gomberoff, L., Muñoz, V.

Parametric decay of a circularly polarized electromagnetic wave in an electron-positron magnetized plasma

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DOCUMENT TYPE: Article

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## **PROYECTOS DE INVESTIGACIÓN**

Investigador Responsable. 1121144 Nonlinear processes in relativistic electron-positron plasmas. 2012

Investigador Responsable. 1080658 Nonextensive statistics in complex systems: a study in plasmas, seisms and traffic/pedestrian flow. 2008

Investigador Responsable. 1060830 Waves in nonextensive relativistic plasmas. 2006

Coinvestigador. 1050126 Determination of x-ray generation properties: an experimental study in the speed4 fast-plasma focus device. 2005

Investigador Responsable. 1020558 Kinetic effects on parametric decays in relativistic plasmas. 2002

Actualización, mayo 2014