Curriculum Vitae

José Juan Blanco-Pillado
Department of Physics and Astronomy
Robinson Hall
Tufts University
Medford, MA 02155
(617) 627-2753
(Fax) (617) 627 3878
jose@cosmos2.phy.tufts.edu
http://cosmos5.phy.tufts.edu/~jose/

Personal

Nationality: Spanish

Education

Ph.D.
Tufts University, 1997-present. Degree expected June 2001.
Advisor: Prof. Alexander Vilenkin.
Dissertation: "Topological defects and ultra-high energy cosmic rays."

M.S.
University of Santiago de Compostela, 1995-97, Spain.
Advisor: Prof. Enrique Zas.
M.S. Thesis : "Limits on topological defect neutrino fluxes from horizontal air shower measurements."

B.S. in Physics.
University of Santiago de Compostela, 1990-95, Spain.

Honors

First Spanish National Physics Award. Ministry of Education, Spain, 1995.

Outstanding M.S. Physics Student Award. University of Santiago de Compostela, 1997.

Outstanding Academic Achievement Award. Tufts University, 2000.

Teaching

Teaching Assistant, Tufts University
Introductory Physics, Spring 1999-Present.

Recitation Instructor, Tufts University
Introductory Physics, Fall 2000.

Research Interests

Topological Defects

Field Theory simulations of ordinary cosmic strings.
Analytical study of ordinary and superconducting strings.
Monopole-Antimonopole pairs.

Ultra-high Energy Cosmic Rays

Possible connection with topological defect annihilation.
Viability study for other propossed ideas in relation with their origin.

Astroparticle Physics and Cosmology.

Dark Matter.
Neutrino Astrophysics.

Publications

Publications pending

"A vorton gun", Ken D. Olum, J.J. Blanco-Pillado, Xavier Siemens, astro-ph/0009072, *Submitted to Nuclear Physics B.*

"Electromagnetic radiation from superconducting string cusps", J.J. Blanco-Pillado, Ken D. Olum, astro-ph/0008297, *Submitted to Nuclear Physics B.*

"General solution for chiral current carrying strings", J.J. Blanco-Pillado, Ken D. Olum, A. Vilenkin, astro-ph/0004410, *Submitted to Phys. Rev. D*

Refereed journal articles

"Radiation from cosmic string standing waves", Ken D. Olum, J.J. Blanco-Pillado, *Phys. Rev. Lett.* 84: 4288-4291 (2000).

"High energy cosmic rays from neutrinos", J.J. Blanco-Pillado, R.A. Vázquez and E. Zas *Phys. Rev. D* **61**, 123003 (2000)

"Monopole-antimonopole bound states as a source of ultra-high-energy cosmic rays", J.J. Blanco-Pillado, Ken D. Olum, *Phys. Rev. D* **60**, 083001 (1999).

"Field theory simulation of Abelian-Higgs cosmic string cusps", Ken D. Olum, J.J. Blanco-Pillado *Phys. Rev. D* **60**, 023503 (1999)

"The form of cosmic string cusps", J.J. Blanco-Pillado, Ken D. Olum, *Phys. Rev. D* **59**, 063508 (1999).

"Limits on topological defect neutrino fluxes from horizontal air shower measurements," J.J. Blanco-Pillado, R.A. Vázquez and E. Zas, *Phys. Rev. Lett.* **78**, 3614 (1997)

Scholarships

Fundación Pedro Barrié de la Maza Scholarship. Two year scholarship to pursue postgraduate studies at Tufts University, 1997-1999.

Research Fellowship from the Galician Goverment, University of Santiago de Compostela, 1995-1997.

CERN Summer Student Programme, Geneva, Switzerland, Summer 1996.

GSI Summer Student Programme, Gesellschaft fur Schwerionenforschung, Darmstadt, Germany, Summer 1995.

IAC Summer Research Grant, Instituto de Astrofisica de Canarias, Tenerife, Spain,Summer 1994.

Erasmus Fellowship, European Union. One year of study at Department of Physics and Astronomy, University of Sheffield, UK, 1994.

References

Alexander Vilenkin
Department of Physics and Astronomy
Tufts University
Medford
MA 02155
USA.
+1 617 627-3147
vilenkin@cosmos2.phy.tufts.edu

Ken D. Olum
Department of Physics and Astronomy
Tufts University
Medford
MA 02155
USA.
+1 617 627-2753
kdo@cosmos5.phy.tufts.edu

Enrique Zas
Departamento de Física de Partículas
Facultade de Física
Universidade de Santiago de Compostela
15706, Santiago de Compostela
SPAIN.
+34 981 563100, Ext. 13970
zas@fpaxp1.usc.es