

**David Ruffolo**

Married, 3 children

Lives in Bangkok, Thailand

Education

B.S. in Physics & B.A. in Mathematics, University of Cincinnati (1985)

Ph.D. in Physics, University of Chicago (1991)

Employment after Graduation:

1991 – 1997: Lecturer, Department of Physics, Chulalongkorn Univ., Bangkok, Thailand

1997 – 2003: Associate Professor, Department of Physics, Chulalongkorn Univ., Bangkok, Thailand

2003 – 2004: Associate Professor, Department of Physics, Mahidol Univ., Bangkok, Thailand

Current Job Description:

Since 2004: Professor, Department of Physics, Mahidol Univ., Bangkok, Thailand. Research topics include ground-based detection of galactic cosmic rays at energies above 16 GeV; analysis of GeV-range ions from solar storms; space plasma physics, especially regarding the random walk of magnetic field lines and particles in space.

Career Highlights:

1. Led the collaboration to set up the Princess Sirindhorn Neutron Monitor at the summit of Doi Inthanon, Thailand's highest mountain, which has operated since 2007. This site has the world's highest geomagnetic cutoff energy for a fixed station, providing a unique data set with additional capabilities to detect spectral variations of galactic cosmic rays.
2. Helped establish a collaboration to determine the directional distribution of high-energy particles from solar storms, their transport properties, and their injection history from the Sun for various solar events.
3. Developed an explanation of dropouts in solar energetic particles in terms of temporary topological trapping by turbulent structures.
4. Improved analytic theories of the random walk of magnetic field lines and energetic particles in space.
5. Provided the first mathematical framework for the loss cone and shock-reflection features in galactic cosmic ray flux in advance of shocks triggered by solar storms, with a potential for advance warning of space weather effects.

Publications (as of April 2014: **50** journal publications, h-index=**14**, with more than **600** citations, excluding self-citations), including

1. D. Ruffolo (1995), Effect of Adiabatic Deceleration on the Focused Transport of Solar Cosmic Rays, *Astrophys. J.*, **442**, 861 (80 citations)
2. D. Ruffolo (1999), Transport and Acceleration of Energetic Particles near an Oblique Shock, *Astrophys. J.*, **515**, 787 (22 citations)
3. J. W. Bieber, W. Dröge, P. A. Evenson, R. Pyle, D. Ruffolo, U. Pinsook, P. Tooprakai, M. Rujiwarodom, T. Khumlumlert, and S. Krucker (2002), Energetic Particle Observations during the 2000 July 14 Solar Event, *Astrophys. J.*, **567**, 622 (85 citations)
4. K. Leerunnavarat, D. Ruffolo, and J. W. Bieber (2003), Loss Cone Precursors to Forbush Decreases and Advance Warning of Space Weather Effects, *Astrophys. J.*, **593**, 587 (29 citations)
5. D. Ruffolo, W. H. Matthaeus, and P. Chuychai (2003), Trapping of Solar Energetic Particles by Small-Scale Topology of Solar Wind Turbulence, *Astrophys. J. Lett.*, **597**, L169 (29 citations)
6. J. W. Bieber, P. Evenson, W. Dröge, R. Pyle, D. Ruffolo, M. Rujiwarodom, P. Tooprakai, and T. Khumlumlert (2004), Spaceship Earth Observations of the Easter 2001 Solar Particle Event, *Astrophys. J. Lett.*, **601**, L103 (49 citations)
7. D. Ruffolo, W. H. Matthaeus, and P. Chuychai (2004), Separation of Magnetic Field Lines in Two-Component Turbulence, *Astrophys. J.*, **614**, 420 (36 citations)
8. D. Ruffolo, P. Chuychai, and W. H. Matthaeus (2006), Random Walk of Magnetic Field Lines in Nonaxisymmetric Turbulence, *Astrophys. J.*, **644**, 971 (22 citations)

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