

Education

- **Ph.D. in Physics**, University of Delaware, May, 2002
- **M.S. & B.S. in space physics**, Peking University, Beijing, China, July 1998, July, 1995

Awards

- 2011: China National Funds for Distinguished Young Scientists (Jie Qing)

Professional Experience

- Nov. 2005 - present: Professor, fellow of the one-hundred talented scientist plan, State Key Laboratory of Space Weather, Center for Space Science and Applied Research, Chinese Academy of Sciences.
- May 2002 - Oct. 2005: Research Associate, Dept. of Physics & Space Sciences, Florida Institute of Technology, with Prof. Hamid K. Rassoul, Prof. Ming Zhang and Prof. Joseph R. Dwyer. On cosmic ray, acceleration and transport processes in the heliosphere
- Jan. 2002 - April 2002: Post Doctoral Fellow, Bartol Research Institute, University of Delaware. On particle transport theory and simulation of MHD turbulence.

Research Interests

- Theoretical/Computational research and data analysis in astrophysics and space physics, especially in solar energetic particles and galactic cosmic ray, acceleration, transport processes in the space
- space weather research

Publications list

- “Numerical modeling of magnetohydrodynamic activity in the Swarthmore spheromak experiment”, V. S. Lukin, G. Qin, W. H. Matthaeus and M. R. Brown, *Phys. Plasmas*, Volume 8, Number 5, 2001.
- “Energetic particles and Magnetohydrodynamic Activity in the Swarthmore spheromak experiment”, G. Qin, V. S. Lukin, C. D. Cothran, M. R. Brown and W. H. Matthaeus, *Phys. Plasmas*, Volume 8, Number 11, 2001.
- “Subdiffusion transport of charged particles perpendicular to the large scale magnetic field”, G. Qin, W. H. Matthaeus and J. W. Bieber, *Geophys. Res. Lett.*, 29(4), 1048, 2002.

- “Energetic particles from three-dimensional magnetic reconnection events in the Swarthmore Spheromak Experiment”, M.R. Brown, C.D. Cothran, M. Landreman, D. Schlossberg, W.H. Matthaeus, G. Qin, V.S. Lukin, and T. Gray, *Phys. Plasmas*, Volume 9, Number 5, Part 2, 2077-2084, 2002.
- “Perpendicular transport of charged particles in composite model turbulence: recovery of diffusion”, G. Qin, W. H. Matthaeus and J. W. Bieber, *Astrophys. J.*, 578L, 117Q, 2002.
- “Nonlinear Collisionless Perpendicular Diffusion of Charged Particles”, W.H. Matthaeus, G. Qin, J.W. Bieber and G.P. Zank, *Astrophys. J.*, 590L, 53, 2003
- “Transport in random magnetic fields: diffusion, subdiffusion and nonlinear second diffusion”, G. Qin, W. H. Matthaeus and J. W. Bieber, *Proceedings of Solar Wind Ten, AIP* 679, 664, 2003
- “Nonlinear Guiding Center Theory of Perpendicular Diffusion: General Properties and Comparison with Observation”, J. W. Bieber, W. H. Matthaeus, A. Shalchi and G. Qin, *Geophys. Res. Lett.*, 31, 10.1029/2004GL020007, 2004
- “Interplanetary transport mechanisms of solar energetic particles”, G. Qin, M. Zhang, J.R. Dwyer and H.K. Rassoul, *Astrophys. J.*, 609, 1076, 2004
- “Nonlinear Parallel and Perpendicular Diffusion of Charged Cosmic Rays in Weak Turbulence”, A. Shalchi, J.W. Bieber, W.H. Matthaeus, and G. Qin, *Astrophys. J.*, 616, 617, 2004
- “The model dependence of solar energetic particle mean free paths under weak scatterings”, G. Qin, M. Zhang, J.R. Dwyer, H.K. Rassoul and G.M. Mason, *Astrophys. J.*, 627(1), 562, 2005
- “Parallel diffusion of charged particles in strong 2D turbulence”, G. Qin, W.M. Matthaeus, J.W. Bieber, *Astrophys. J.*, 640(1), L103, 2006
- “The effect of adiabatic cooling on the fitted parallel mean free path of solar energetic particles”, G. Qin, M. Zhang, and J.R. Dwyer, *J. Geophys. Res.*, 111, A08101, doi:10.1029/2005JA011512, 2006
- “Ulysses observations of Jovian relativistic electrons in the interplanetary space near Jupiter: Determination of perpendicular particle transport coefficients and their energy dependence”, M. Zhang, G. Qin, H. Rassoul, B. McKibben, C. Lopate and B. Heber, *Planet. Space Sci.*, 55, Issues 1-2, 12-20, January, 2007
- “Nonlinear Parallel Diffusion of Charged Particles: Extension to the Nonlinear Guiding Center Theory”, G. Qin, *Astrophys. J.*, 656(1), 217, 2007
- “Effect of flux tubes in solar wind on the diffusion of energetic particles”, G. Qin, and G. Li, *Astrophys. J.*, 682, L129, 2008

- “Propagation of Solar Energetic Particles in 3-dimensional Interplanetary Magnetic Fields”, M. Zhang, G. Qin and H. Rassoul, *Astrophys. J.*, 692, 109, 2009
- “Prediction of the shock arrival times with SEP observations”, G. Qin, M. Zhang, and H.K. Rassoul, *J. Geophys. Res.*, 114, A09104, doi:10.1029/2009JA014332, 2009
- “Pitch angle diffusion coefficients of charged particles from computer simulations”, G. Qin and A. Shalchi, *Astrophys. J.*, 707, 61, 2009
- “Random Walk of Magnetic Field Lines: Analytical Theory versus Simulations”, A. Shalchi and G. Qin, *Astrophys. Space Sci.*, 330, 279, 2010
- “A Simple Analytical Method to Determine Solar Energetic Particles Mean Free Path”, H.-Q. He and G. Qin, *Astrophys. J.*, 730, 46, 2011
- “Effect of current sheets on the solar wind magnetic field power spectrum from the Ulysses observation: from Kraichnan to Kolmogorov scaling”, G. Li, B. Miao, Q. Hu, and G. Qin, *Phys. Rev. Lett.*, 106, 125001, 2011
- “Propagation of Solar Energetic Particles in 3-dimensional Interplanetary Magnetic Fields: In View of Characteristics of Sources”, H.-Q. He, G. Qin and M. Zhang, *Astrophys. J.*, 734, 74, 2011
- “An effect of perpendicular diffusion on the anisotropy of solar energetic particles from unconnected sources”, G. Qin, H.-Q. He, and M. Zhang, *Astrophys. J.*, 738, 28, 2011
- “A realistic solar wind model with current sheets”, G. Li, and G. Qin, Proceedings of 5th Astrophysics Numerical Conference, Numerical Modeling of Space Plasma Flows: ASTRONUM-2010, Nikolai V. Pogorelov, Edouard Audit, and Gary P. Zank, eds, *ASP Conference Series*, 444, 117, 2011
- “Modeling the effect of current sheets on the power spectrum of the solar wind magnetic field using a cell model”, G. Li, G. Qin, Q. Hu, and B. Miao, *Geophys. Res. Lett.*, submitted
- “Numerical investigation of the influence of large turbulence scales on the parallel and perpendicular transport of cosmic rays”, G. Qin, and A. Shalchi, *Astrophys. J.*, submitted
- “Using Soft X-ray observations to help the prediction of flare related interplanetary shocks arrival times at the Earth”, H.-L. Liu, and G. Qin, *J. Geophys. Res.*, submitted
- “Effect of perpendicular diffusion on energetic particles accelerated by the interplanetary coronal mass ejection shock”, Y. Wang, G. Qin, and M. Zhang, *Astrophys. J.*, submitted