

VIACHESLAV TITOV

SUMMARY

A theoretical plasma physicist with a strong record of achievements in magnetohydrodynamics and structural analysis of solar magnetic fields. Experienced in advanced methods for solving differential equations of mathematical physics and skillful in using computer-algebraic systems and developing numerical algorithms. Highly motivated and intuitive, successful in team work and, in particular, in supervising postgraduate students.

Education

Moscow Institute of Physics and Technology, Astrophysics, Ph. D., 1985

Moscow Institute of Physics and Technology, Physics, Diploma, graduated with honor, 1982

Appointments

Research Scientist (2008-present), Predictive Science, Inc., San Diego

Research Scientist (2004-2008), Advanced Engineering and Applied Sciences Division, Science Applications International Corporation, San Diego

Senior Research Scientist (1998–2004), interdisciplinary research group “Topological Structure of Electromagnetic Fields in Conducting Fluids” supported by the Volkswagen-Foundation, Institute for Theoretical Physics IV, Ruhr-University Bochum, Bochum, Germany

Junior Research Scientist (1985), Research Scientist (1986), Senior Research Scientist (1992–1998), Program Systems Institute of the Russian Academy of Sciences, Pereslavl-Zalessky, Russia

Selected publications (from over 70 publications)

1. Titov, V.S., T.G. Forbes, E.R. Priest, Z. Mikić, and J.A. Linker, “Slip-squashing factors as a measure of three-dimensional magnetic reconnection”, *ArXiv e-prints*, <http://arXiv:0807.2892>, (2008); *Astrophys. J.*, **693**, 1029, (2009)
2. Titov, V.S., Z. Mikić, J.A. Linker, and R. Lionello, “1997 May 12 coronal mass ejection event: I. A simplified model of the pre-eruptive magnetic structure”, *Astrophys. J.*, **675**, 1614, (2008).
3. Titov, V. S., “Generalized squashing factors for covariant description of magnetic connectivity in the solar corona”, *Astrophys. J.*, **660**, 863, (2007)
4. Kliem, B., V. S. Titov and T. Török, “Formation of current sheets and sigmoidal structure by the kink instability of a magnetic loop”, *Astron. Astrophys.*, **413**, L23 (2004)
5. Titov, V. S., K. Galsgaard and T. Neukirch, “Magnetic pinching of hyperbolic flux tubes: I. Basic estimations”, *Astrophys. J.*, **582**, 1172 (2003)
6. Titov, V. S., G. Hornig and P. Démoulin, “Theory of magnetic connectivity in the solar corona”, *J. Geophys. Res. – Space Phys.*, **107**, 1164, (2002)
7. Titov, V.S., and G. Hornig, “Magnetohydrodynamic flows sustaining stationary magnetic nulls”, *Phys. Plasmas*, **7**, 3542 (2000)

8. Titov, V. S., and P. Démoulin, “Basic topology of twisted magnetic configurations in solar flares”, *Astron. Astrophys.*, **351**, 707 (1999)
9. Titov, V. S., and E. R. Priest, “The collapse of an X-type neutral point to form a reconnecting time-dependent current sheet”, *Geophys. Astrophys. Fluid Dynamics*, **72**, 249 (1993)
10. Titov, V.S., “On the method of calculating two-dimensional potential magnetic fields with current sheets”, *Solar Phys.* **139**, 401–404 (1992)

Synergistic Activities

- Reviewer for *The Astrophysical Journal*, *Physics of Plasmas*, and other scientific journals
- Member of the American Geophysical Union and American Astronomical Society