



Yingjuan Ma

Assistant Research Geophysicist, IGPP UCLA

Ph.D. in Atmospheric and Space Sciences, University of Michigan, 2006

Honors and awards

- 2008. June -2011. May, PI, 'Study of the Martian Ionospheric and Atmospheric Responses to Extreme Space Weather Events', NASA LWS TR&T program. This study is to examine the detailed responses and long-term consequences of the Martian ionosphere and atmosphere to extreme space weather events using two sophisticated 3D models.
- 2010. Feb -2013. Jan, PI, 'Studies of the Plasma Interaction Processes around Venus Using a Global Multi-Species Hall MHD Model', NASA PATM. This study is to understand the solar wind interaction with Venus ionosphere by developing an advanced global MHD model of Venus and to examine the effect of various physical processes during the interaction process using the model.

Research Activities

- Improve the current single fluid MHD model of Titan to a two-fluid MHD model, the model results establish that the importance of the photo-electron heating in the ionosphere.
- Developed an advanced global MHD model of Venus to study to understand the solar wind interaction with Venus ionosphere

Service

- Member of 2008 ISSI International Team of Intercomparison of Global Models and Measurements of the Martian Plasma Environment (attend two workshops last year in Feb and Sep, did 9 Mars simulations for the team)
- Team leader of LWS TR&T focus team on extreme space weather events in the solar system, since June 2008

Publications (since July 1, 2009)

1. Jia, Y.-D., C. T. Russell, K. K. Khurana, J. S. Leisner, **Y.-J. Ma**, and M. K. Dougherty (2010), Time-varying magnetospheric environment near Enceladus as seen by the Cassini magnetometer, *Geophys. Res. Lett.*, 37, L09203, doi:10.1029/2010GL042948.
2. Jia, Y.-D., C. T. Russell, K. K. Khurana, **Y. J. Ma**, D. Najib, and T. I. Gombosi (2010), Interaction of Saturn's magnetosphere and its moons: 2. Shape of the Enceladus plume, *J. Geophys. Res.*, 115, A04215, doi:10.1029/2009JA014873.
3. Fang, X., M. W. Liemohn, A. F. Nagy, J. G. Luhmann, and **Y. Ma**, Escape probability of Martian atmospheric ions: controlling effects of the electromagnetic fields, *J. Geophys. Res.*, doi:10.1029/2009JA014929, 2010.
4. Xiaohua Fang, M. W. Liemon, A. F. Nagy, J. G. Luhmann and **Y. J. Ma**, On the effect of the Martian crustal magnetic field on atmospheric erosion, *Icarus*, Volume 206, Issue 1, p. 130-138, doi:10.1016/j.icarus.2009.01.012, 2010.
5. D. A. Brain, et al., A Comparison of Global Models for the Solar Wind Interaction with Mars, *Icarus*, Volume 206, Issue 1, p. 139-151, [doi:10.1016/j.icarus.2009.06.030](https://doi.org/10.1016/j.icarus.2009.06.030), 2010.
6. Glocer, A., G. Toth, **Y. J. Ma**, T. Gombosi, J.-C. Zhang, and L. M. Kistler, Multi-Fluid BATS-R-US: Magnetospheric Composition and Dynamics During Geomagnetic Storms, Initial Results, *J. Geophys. Res.*, doi:10.1029/2009JA014418, 2009.
7. Zhang, T. L., J. Du, **Y. J. Ma**, H. Lammer, W. Baumjohann, C. Wang, and C. T. Russell Disappearing induced magnetosphere at Venus: Implications for close-in exoplanets, *Geophys. Res. Lett.*, doi:10.1029/2009GL040515, 2009.