Han-Li Liu

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Education:

1996	Ph.D.	Atmospheric and Space Physics	University of Michigan
1989	B.S.	Fluid Mechanics	University of Science and Technology of China

Appointments:

2012-Present	Senior Scientist	NCAR/HAO
2006–2012	Scientist III	NCAR/HAO
2003–2006	Scientist II	NCAR/HAO
1999–2003	Scientist I	NCAR/HAO
1997–1999	Postdoctoral Visitor	NCAR/HAO
1996–1997	Postdoctoral Research Fellow	University of Michigan
1991–1996	Research Assistant	University of Michigan

Research Interests:

Han-Li Liu's research includes the theoretical, numerical, and interpretive studies of the dynamics, structure, and solar/terrestrial responses of the Earth's middle and upper atmosphere, with special emphasis on modeling physical and chemical processes on both global and regional scales, and the nonlinear couplings of the global and local scale processes and different regions of the atmosphere. He also works on the development and improvement of general circulation models (GCMs) and parameterization schemes for the GCMs, including the NCAR Thermosphere-Ionosphere-Mesosphere-Electrodynamics GCM (TIME-GCM) and the Whole Atmosphere Community Climate Model (WACCM); thermospheric and ionospheric extension of WACCM (WACCM-X); development of diagnostic tools for analyzing the large scale data sets of the model results and interpretive studies of observations using model diagnostics; geophysical turbulence and self-organized critical phenomena in geophysics.

Professional Affiliations

American Geophysical Union

Professional Activities

2024-Present	Member, SCOSTEP Next Scientific Program Committee
2022-Present	Section Head, HAO Geospace Frontiers Section.
2022-Present	Associate Editor, Frontiers in Astronomy and Space Sciences.
2020-Present	Associate Editor, Journal of Geophysical Research-Atmosphere.
2018-Present	Co-lead, System for Integrated Modeling of Atmosphere (SIMA)
2007-Present	Adjunct Faculty, University of Colorado, Boulder
2003-Present	Member, HAO Visitor Committee
2017-2022	Member, NCAR Supercomputing Requests Review Committee
2018-2021	Member, NCAR Appointment Review Group
2019-2020	Member, ACOM Lab Director Search Committee
2018-2020	Member, Science Requirements Advisory Panel (SRAP) for the NWSC-3 procurement
2012-2014	Member, NCAR Diversity Committee

2011-2014	Co-Chair, Whole Atmosphere Working Group, NCAR Community Earth System Model (CESM).
2009-2014	Member, NOAA Space Weather Prediction Center (SWPC) Interest Group.
2006-2009	Associate Editor, Journal of Geophysical Research-Space Physics.
2005-2008	Chair, HAO Visitor Committee.
2007-2009	Member, CEDAR Science Steering Committee.
2004-2015	Visiting Professor, Chinese Academy of Sciences
2004-2007	Faculty Affiliate, Colorado State University.
2003-2004	Committee Member, NCAR/UCAR Early Career Scientist Assembly

Honors

2022	NCAR/HAO John W. Firor Publication Award
2019	NCAR/HAO John W. Firor Publication Award
2019	AOGS Aeronomy Section Distinguished Lecturer
2018	NSF CEDAR Prize Lecture Award
2016	NCAR Outstanding Accomplishment Award on Scientific/Technical Advancement
2004/2019	Nominated for the NCAR Outstanding Publication Award

Publications (*Researcher ID*: http://www.researcherid.com/rid/A-9549-2008)

Liu, H.-L., and M. E. Hagan, Local heating/cooling of the mesosphere due to gravity wave and tidal coupling, Geophys. Res. Lett., 25, 2941-2944, 1998.

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Nozawa, S., H.-L. Liu, A. D. Richmond, and R. G. Roble, Comparison of the auroral E region neutral winds derived with the EISCAT radar and predicted by NCAR TIME-GCM, J. Geophys. Res., 106, 24,691-24,700, 2001

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Liu, H.-L., and R. G. Roble, A study of a self-generated stratospheric sudden warming and its mesospheric/lower thermospheric impacts using coupled TIME-GCM/CCM3, J. Geophys. Res., 107, 4695, doi:10.1029/2001JD001533, 2002.

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Liu, H.-L., and J. W. Meriwether, Analysis of a temperature inversion event in the lower mesosphere, J. Geophys. Res., 109, D02S07, 10.1029/2002JD003026, 2004.

Liu, H.-L., and R. G. Roble, Dynamical processes related to the atomic oxygen equinox transition, J. Atmos. Solar Terr. Phys., 66, 769-779, 2004.

Liu, H.-L., E. R. Talaat, R. G. Roble, R. S. Lieberman, D. M. Riggin, and J.-H Yee, 6.5-Day wave and its seasonal variability in the middle and upper atmosphere, J. Geophys. Res., 109, D21112, doi:10.1029/2004JD004795, 2004.

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