Baijun Tian

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Research Overview

Dr. Tian is an atmospheric and climate scientist with the Atmospheric Physics and Weather group (329E) in Earth Science Section at NASA Jet Propulsion Laboratory (JPL), California Institute of Technology (Caltech), and a project scientist in the Joint Institute for Regional Earth System Science and Engineering (JIFRESSE) at University of California, Los Angeles (UCLA). He studies the Earth's climate variability and change in the past, present, and future using satellite remote-sensing datasets and climate model simulations. He is an expert on the Atmospheric Infrared Sounder (AIRS) Level 3 (L3) and Observations for Model Intercomparison Project (Obs4MIPs) products, climate model evaluation, tropical deep convection, Madden-Julian Oscillation (MJO), diurnal cycle, intertropical convergence zone (ITCZ), and MJO-related aerosol and trace gas variations. Dr. Tian is one member of the NASA AIRS science team at JPL and has led the development of the AIRS V6/V7 L3 and Obs4MIPs V1.0/V2.0/V2.1 products. As of 4/5/2023, he has 32 first-authored publications and 75 publications in total including 57 peer-reviewed journal articles and book chapters and 18 technical reports and miscellaneous papers. His current H-index is 25 according to the Web of Science (WoS) and 30 according to the Google Scholar (GS).

Education

- Ph.D., Oceanography, Scripps Institution of Oceanography, UCSD, 2002
- M.S., Meteorology, Dept. Geophysics, Peking University, 1996
- B.S., Meteorology, Dept. Geophysics, Peking University, 1992

Professional Experience

2009–present: Research Scientist, Jet Propulsion Laboratory, Caltech
2018–present: Project Scientist, JIFRESSE, UCLA
2007–2018: Assistant/Associate Researcher, JIFRESSE, UCLA
2007–2009: Visiting Independent Advisor, Jet Propulsion Laboratory, Caltech
2005–2007: Postdoc Scholar, Jet Propulsion Laboratory, Caltech
2004–2005: Research Associate, Division of Geological & Planetary Sciences, Caltech
2002–2004: Postdoc Research Associate, NOAA GFDL, AOS Program, Princeton University

Affiliation with Professional Societies

- Member of American Geophysical Union (AGU) since 1999
- Member of American Meteorological Society (AMS) since 2001
- Member of Asia Oceania Geosciences Society (AOGS) since 2012

Selected Awards and Honors:

- JPL Team Award for successful operation of the HAMSR instrument in the NASA CPEX-CV field campaign, 2023
- JPL Team Award for assessing the consequences of the loss of AMSU-A2, 2017
- JPL IPCC AR5 Team Award, 2012
- JPL EVI-1 Proposal Team Award, 2012

Contributions to NASA Missions

- L3 scientist of the NASA AIRS science team at JPL/Caltech since 2009
  - Led the development of the AIRS V6 & V7 L3 (regularly gridded) products and their user guides that are publicly available at the NASA GES DISC
  - Led the development of the AIRS Obs4MIPs V1, V2.0 and V2.1 products that are publicly available at the Earth System Grid Federation (ESGF)
- Member of the NASA CYGNSS science team since 2017
- Member of the NASA downscaling project from 2014 to 2016
- Member of the NASA SNPP science team since 2018
- Co-I on the NASA EVI GeoStorm and TWICE proposals and EVS MC-CARDIO proposal
- Panelist of NASA ROSES proposal review panels
- Panelist of JPL SURP proposal review panels
- Panelist of JPL strategic initiatives proposal review panels
- Member of the JPL Section 329 DEI working group

Community Leadership Efforts and Professional Services

- Associate Editor of Frontiers in Environmental Science
- Leadership roles for Asian American Academy of Science and Engineering (AAASE): treasurer and board director (2021–present)
- Leadership roles for Chinese-American Oceanic and Atmospheric Association (COAA) Southern California Chapter (SCC): Advisory board member (2020–present), president (2018–2020), vice president (2017–2018), COAA Young Scholar Award selection committee chair (2017), and JPL regional director (2015-2017)
- Evaluator of fellow candidates for the Indian Academy of Sciences (IASc)
- Session convener and chair, CMIP6 climate model evaluation, 2019/20/21 AGU fall meetings
- Session chair, Advances in satellite observations for Earth science and observing technologies, 2018 AMS annual meeting, Austin, TX
- Session chair, Climate processes and other research applications enabled by satellite sounders, imagers and profilers (A49), 2010 AGU fall meeting, San Francisco, CA
- Session chair, 20th conference on climate variability and change, 2008 AMS annual meeting, New Orleans, LA
- Proposal reviewer for NSF climate and large-scale dynamics program
- Proposal reviewer for NOAA Climate Program Office (CPO)
- Proposal reviewer for DOE atmospheric system research program
- Manuscript reviewer for various academic journals

Public Websites of My Publications:

- Google Scholar (GS): http://scholar.google.com/citations?hl=en&user=5ZNULg0AAAAJ
- Web of Science (WoS): https://www.webofscience.com/wos/author/record/A-1141-2007
- Open Researcher and Contributor IDentifier (ORCID): http://orcid.org/0000-0001-9369-2373/

Research News and Highlights:

- Nov 2020: AIRS Obs4MIPs V2.1 dataset was published on the ESGF and its reference paper was published on ESS.
- Apr 2018: AIRS Obs4MIPs V2.0 dataset was published on the ESGF and its reference paper was published on ESS.
- May 2014: My review paper on the MJO was published as one chapter of the book *Encyclopedia of Remote Sensing*.
- Sep 2013: AIRS Obs4MIPs V1.0 dataset was on the NCAR Climate Data Guide.

- Jan 2013: My AIRS CMIP5 paper, the reference paper for the AIRS Obs4MIPs V1.0 dataset, was published in JGR.
- May 2012: My review paper on the MJO's chemical and biological impacts was published as one chapter of the book *Intraseasonal Variability of the Atmosphere-Ocean System (2nd Ed*).
- Sep 2011: AIRS Obs4MIPs V1.0 dataset was published on the ESGF.
- Feb 2011: JPL AIRS News Archive on my MJO/AIRS study.
- Jul 2007: US CLIVAR MJO Working Group on my MJO/O_3 study.
- Dec 2006: NASA Web Feature on my MJO/O_3 study.

Publication Statistics (As of 4/11/2023):

- Total publications: 76
  - Total peer-reviewed journal papers: 55
  - Total peer-reviewed book chapters: 2
  - Total technical reports and miscellaneous papers: 19
- Total 1st-authored publications: 33
  - Total 1st-authored peer-reviewed journal papers: 18
  - Total 1st-authored peer-reviewed book chapters: 2
  - Total 1st-authored technical reports and miscellaneous papers: 13
- GS total publications: 142
- GS total 1st-authored publications: 53
- GS H-index: 30
- GS total citations: 3084
- WoS total publications: 59
- WoS total 1st-authored publications: 21
- WoS H-index: 25
- WoS total citations: 2254

Peer-Reviewed Journal Papers: Total-55, 1st-authored-18

2022 (1)

Gahtan, J. and **B. Tian**, 2022: Stratospheric Kelvin wave activity as a function of equivalent depth in AIRS and reanalysis datasets. *J. Geophys. Res.*, 127, e2021JD035572, doi:10.1002/2021JD035572.

2020 (3)

Tian, B. and T. J. Hearty, 2020: Estimating and removing the sampling biases of the AIRS Obs4MIPs V2 data. *Earth & Space Sci.*, 7(12), e2020EA001438, doi:10.1029/2020EA001438.

Ding, F., A. Savtchenko, T. Hearty, J. Wei, M. Theobald, B. Vollmer, **B. Tian**, and E. J. Fetzer, 2020: Assessing the impacts of two averaging methods on AIRS Level 3 monthly products and multi-year monthly means. *J. Atm. Oc. Tech.*, 37(6), 1027-1050, doi:10.1175/JTECH-D-19-0129.

Tian, B. and X. Dong, 2020: The double-ITCZ bias in CMIP3, CMIP5, and CMIP6 models based on annual mean precipitation. *Geophys. Res. Lett.*, 47(8), 11, doi:10.1029/2020GL087232.

2019 (3)

Gibson, P. B., D. E. Waliser, H. Lee, **B. Tian**, and E. Massoud, 2019: Climate model evaluation in the presence of observational uncertainty: Precipitation indices over the Contiguous United States, *J. Hydrometeor.*, 20(7), 1339-1357, doi:10.1175/jhm-d-18-0230.1.

Tian, E. W., H. Su, **B. Tian**, J. H. Jiang, 2019: Interannual variations of water vapor in the tropical upper troposphere and the lower and middle stratosphere and their connections to ENSO and QBO, *Atmos. Chem. Phys.*, 19(15), 9913-9926, doi:10.5194/acp-19-9913-2019.

Tian, B., E. J. Fetzer, and E. M. Manning, 2019: The Atmospheric Infrared Sounder Obs4MIPs version 2 data set, *Earth & Space Sci.*, 6(2), 324-333, doi:10.1029/2018EA000508.

2018 (2)

Qu, X., A. Hall, A. DeAngelis, M. Zelinka, S. Klein, H. Su, **B. Tian**, and C. Zhai, 2018: On the emergent constraints of climate sensitivity, *J. Climate*, 31(2), 863–875, doi:10.1175/jcli-d-17-0482.1.

Kim, J., B. Guan, D. Waliser, R. Ferraro, J. Case, T. Iguchi, E. Kemp, W. Putnam, W. Wang, D. Wu, and **B. Tian**, 2018: Winter precipitation characteristics in western US related to atmospheric river landfalls: observations and model evaluations, *Climate Dyn.*, 50(1), 231–248, doi:10.1007/s00382-017-3601-5.

2017 (3)

Tian, B., K. Lee, D. Waliser, R. Ferraro, J. Kim, J. Case, T. Iguchi, E. Kemp, D. Wu, W. Putnam, and W. Wang, 2017: Development a model performance metric and its application to assess summer precipitation over the US Great Plains in downscaled climate simulations, *J. Hydrometeor.,* 18(10), 2781–2799, doi:10.1175/jhm-d-17-0045.1.

Lee, H., D. Waliser, R. Ferraro, T. Iguchi, C. Peters-Lidard, **B. Tian**, P. Loikith, and D. Wright, 2017: Evaluating hourly rainfall characteristics over the US Great Plains in dynamically downscaled climate model simulations using NASA-Unified WRF (NU-WRF), *J. Geophys. Res.*, 122(14), 7371–7384, doi:10.1002/2017jd026564.

Iguchi, T., W.-K. Tao, D. Wu, C. Peters-Lidard, J. Santanello, E. Kemp, Y. Tian, J. Case, W. Wang, R. Ferraro, D. Waliser, J. Kim, H. Lee, B. Guan, **B. Tian**, and P. Loikith, 2017: Sensitivity of CONUS summer rainfall to the selection of cumulus parameterization schemes in NU-WRF seasonal simulations, *J. Hydrometeor*., 18(6), 1689–1706, doi:10.1175/ jhm-d-16-0120.1.

2016 (1)

Devasthale, A., J. Sedlar, B. H. Kahn, M. Tjernström, E. J. Fetzer, **B. Tian**, J. Teixeira, T. S. Pagano, 2016: A decade of space borne observations of the Arctic atmosphere: Novel insights from NASA's Atmospheric Infrared Sounder (AIRS) instrument. *Bull. Am. Meteor. Soc.,* 97, 2163–2176, doi:10.1175/bams-d-14-00202.1.

2015 (4)

Tian, B., 2015: Spread of model climate sensitivity linked to double-intertropical convergence zone bias. *Geophys. Res. Lett.,* 42, 4133–4141, doi:10.1002/2015GL064119.

Lee, Y.-G., J. Kim, C.-H. Ho, S.-I. An, H.-K. Cho, R. Mao, **B. Tian**, D. Wu, J. N. Lee, O. Kalashnikova, Y. Choi, and S.-W. Yeh, 2015: The effects of ENSO under negative AO phase on the spring dust activity over northern China: An observational investigation. *Inter. J. Climatology*, 35, 935–947, doi:10.1002/joc.4028.

Seo, K.-W., C. Wilson, T. Scambos, B.-M. Kim, D. E. Waliser, **B. Tian**, B.-H. Kim, and J. Eom, 2015: Surface mass balance contributions to acceleration of Antarctic ice mass loss during 2003-2013. *J. Geophys. Res.*, 120, 3617–3627, doi:10.1002/2014JB011755.

Seo, K.-W., D. E. Waliser, C.-K. Lee, **B. Tian**, T. Scambos, B.-M. Kim, J. H. van Angelen, and M. R. van den Broeke, 2015: Accelerated mass loss from Greenland ice sheet: Links to atmospheric circulation in the Arctic. *Global & Planetary Change*, 128, 61–71, doi:10.1016/j.gloplacha.2015.02.006.

2014 (6)

Liu, C., **B. Tian**, K.-F. Li, G. L. Manney, N. J. Livesey, Y. L. Yung, and D. E. Waliser, 2014: Northern Hemisphere mid-winter vortex-displacement and vortex-split stratospheric sudden warmings: Influence of the Madden-Julian oscillation and quasi-biennial oscillation. *J. Geophys. Res.*, 119, 12599–12620, doi:10.1002/2014JD021876.

Sun, W., P. G. Hess, and **B. Tian**, 2014: The response of the equatorial tropospheric ozone to the Madden-Julian Oscillation in TES satellite observations and CAM-Chem model simulation. *Atmos. Chem. Phys.*, 14, 11775–11790, doi:10.5194/acp-14-11775-2014.

Serra, Y. L., X. Jiang, **B. Tian**, J. A. Amador, E. D. Maloney, and G. N. Kiladis, 2014: Tropical intra-seasonal modes of the atmosphere. *Annual Review of Environment & Resources*, 39, 5.1–5.27, doi:10.1146/annurev-environ-020413-134219.

Kim, D., M.-I. Lee, S. D. Schubert, D. E. Waliser, and **B. Tian**, 2014: Representation of tropical subseasonal variability of precipitation in global reanalysis products. *Climate Dyn.*, **43**, 517–534, doi:10.1007/s00382-013-1890-x.

Hearty, T., A. Savtchenko, **B. Tian**, E. J. Fetzer, Y. L. Yung, M. Theobald, B. Vollmer, E. Fishbein, and Y.-I. Won, 2014: Estimating sampling biases and measurement uncertainties of AIRS/AMSU-A temperature and water vapor observations using MERRA reanalysis. *J. Geophys. Res.*, 119, 2725–2741, doi:10.1002/2013JD021205.

Kahn, B. H., F. Irion, V. Dang, E. Manning, S. Nasiri, C. Naud, J. Blaisdell, M. Schreier, Q. Yue, K. Bowman, E. J. Fetzer, G. Hulley, K. Liou, D. Lubin, S. Ou, J. Susskind, Y. Takano, **B. Tian**, and J. Worden, 2014: The Atmospheric Infrared Sounder version 6 cloud products. *Atmos. Chem. Phys.*, 14, 399–426, doi:10.5194/acp-14-399-2014.

2013 (3)

Guo, Y., **B. Tian**, R. A. Kahn, O. Kalashnikova, S. Wong, and D. E. Waliser, 2013: Tropical Atlantic dust and smoke aerosol variabilities related to the Madden-Julian Oscillation in MODIS and MISR observations. *J. Geophys. Res*., 118, D50409, 4947–4963, doi:10.1002/jgrd.50409.

Li, K.-F., **B. Tian**, K.-K. Tung, L. Kai, J. R. Worden, and Y. L. Yung, 2013: A link between tropical intraseasonal variability and Arctic stratospheric ozone. *J. Geophys. Res.*, 118, D50391, 4280–4289, doi:10.1002/jgrd.50391.

Tian, B., E. J. Fetzer, B. H. Kahn, J. Teixeira, E. Manning, and T. Hearty, 2013: Evaluating CMIP5 models using AIRS tropospheric air temperature and specific humidity climatology, *J. Geophys. Res.*, 118, D50117, 114–134, doi:10.1029/2012JD018607.

2012 (5)

Ao, C. O., D. E. Waliser, T. K. Chan, J.-L. Li, **B. Tian**, F. Xie, and A. J. Mannucci, 2012: Planetary boundary layer heights from GPS radio occultation refractivity and humidity profiles. *J. Geophys. Res*., 117, D16117, doi:10.1029/2012JD017598.

Tian, B., C. O. Ao, D. E. Waliser, E. J. Fetzer, A. J. Mannucci, and J. Teixeira, 2012: Intraseasonal temperature variability in the upper troposphere and lower stratosphere from the GPS radio occultation measurements. *J. Geophys. Res*., 117, D15110, doi:10.1029/2012JD017715.

Jiang, J. H., H. Su, C. Zhai, …, **B. Tian**, J. Teixeira, and G. L. Stephens, 2012: Evaluation of cloud and water vapor simulations in CMIP5 climate models using NASA 'A-Train' satellite observations. *J. Geophys. Res.*, 117, D14105, doi:10.1029/2011JD017237.

Seo, K.-W., D. E. Waliser, **B. Tian**, B.-M. Kim, S.-C. Park, S. Cocke, B.-J. Sohn, and M. Ishii, 2011: Evidence of last two-decade trend in global fresh water discharge and evapotranspiration revealed by recent reanalysis and satellite observations. *Asia-Pacific J. Atmos. Sci.*, 48, 153–158, doi:10.1007/s13143-0015-5.

Li, K.-F., **B. Tian**, D. E. Waliser, M. Schwartz, J. Neu, J. Worden, and Y. L. Yung, 2012: Vertical structure of MJO-related subtropical ozone variations from MLS, TES, and SHADOZ data. *Atmos. Chem. Phys.*, 12, 425–436, doi:10.5194/acp-12-425-2012.

2011 (5)

Wong, S., E. J. Fetzer, B. H. Kahn, **B. Tian**, B. Lambrigtsen, and H.-C. Ye, 2011: Closing the global water vapor budget with AIRS water vapor, MERRA reanalysis, TRMM and GPCP precipitation, and GSSTF evaporation. *J. Clim.*, 24, 6307–6321, doi:10.1175/2011JCLI4154.1.

Wang, J., S. Pawson, **B. Tian**, M.-C. Liang, R.-L. Shia, Y. L. Yung, and X. Jiang, 2011: El Niño-Southern Oscillation in tropical and mid-latitude column ozone. *J. Atmos. Sci.*, 68, 1911–1921, doi:10.1175/JAS-D-11-045.1.

Wong, S., E. J. Fetzer, **B. Tian**, B. Lambrigtsen, and H.-C. Ye, 2011: The apparent water vapor sinks and heat sources associated with the intraseasonal oscillation of the Indian summer monsoon. *J. Climate*, 24, 4466–4479, doi:10.1175/2011JCLI4076.1.

Tian, B., D. E. Waliser, R. A. Kahn, and S. Wong, 2011: Modulation of Atlantic aerosols by the Madden-Julian Oscillation. *J. Geophys. Res.*, 116, D15108, doi:10.1029/2010JD015201.

Liang, C. K., A. Eldering, A. Gettelman, **B. Tian**, S. Wong, E. J. Fetzer, and K.-N. Liou, 2011: Record of tropical interannual variability of temperature and water vapor from a combined AIRS-MLS dataset. *J. Geophys. Res.*, 116, D06103, doi:10.1029/2010JD014841.

2010 (4)

Tian, B., D. E. Waliser, E. J. Fetzer, and Y. L. Yung, 2010: Vertical moist thermodynamic structure of the Madden-Julian Oscillation in Atmospheric Infrared Sounder retrievals: An update and a comparison to ECMWF interim reanalysis. *Mon. Wea. Rev.*, 138, 4576–4582, doi:10.1175/2010MWR3486.1.

Li, K.-F., **B. Tian**, D. E. Waliser, and Y. L. Yung, 2010: Tropical mid-tropospheric CO_2 variability driven by the Madden-Julian Oscillation. *Proc. Nat. Acad. Sci.*, 107, 19171–19175, doi:10.1073/pnas.1008222107.

Seo, K.-W., D. Ryu, B.-M. Kim, D. E. Waliser, **B. Tian**, and J. Eom, 2010: GRACE and AMSR-E-based estimates of winter season solid precipitation accumulation in the Arctic drainage region. *J. Geophys. Res.*, 115, D20117, doi:10.1029/2009JD013504.

Neelin, J. D., B. R. Litner, **B. Tian**, Q. Li, L. Zhang, P. Patra, and M. Chahine, 2010: Long tails in deep columns of natural and anthropogenic tropospheric tracers. *Geophys. Res. Lett.*, 37, L05804, doi:10.1029/2009GL041726.

2009 (3)

Jiang, X., D. E. Waliser, W. S. Olson, W.-K. Tao, T. S. L'Ecuyer, J.-L. Li, **B. Tian**, Y. L. Yung, A. M. Tompkins, S. E. Lang, and M. Grecu, 2009: Vertical heating structures associated with the MJO as characterized by TRMM estimates, ECMWF reanalyses and forecasts: A case study during 1998-99 winter. *J. Climate*, 22, 6001–6022, doi:10.1175/2009JCLI3048.1.

Waliser, D. E., **B. Tian**, M. J. Schwartz, X. S. Xie, W. T. Liu, and E. J. Fetzer, 2009: How well can satellite data characterize the water cycle of the Madden-Julian Oscillation? *Geophys. Res. Lett*., 36, L21803, doi:10.1029/2009GL040005.

Seo, K.-W., D. E. Waliser, **B. Tian**, J. Famiglietti, and T. Syed, 2009: Evaluation of global land-to-ocean fresh water discharge and evapotranspiration using space-based observations. *J. Hydrol.,* 373, 508–515, doi:10.1016/j.jhydrol.2009.05.014.

2008 (4)

Fetzer, E. J., W. G. Read, D. E. Waliser, B. H. Kahn, **B. Tian**, H. Vomel, F. W. Irion, H. Su, A. Eldering, M. de la Torre Juarez, J. H. Jiang, and V. Dang, 2008: Comparison of upper tropospheric water vapor measurements from Microwave Limber Sounder and Atmospheric Infrared Sounder. *J. Geophys. Res*., 113, D22306, doi:10.1029/2008JD010000.

Zhang, Y., S. A. Klein, C. T. Liu, **B. Tian**, R. Marchand, J. Haynes, R. McCoy, Y. Zhang, and T. P. Ackerman, 2008: On the deep convection, high clouds and the upper troposphere water vapor in the Multi-Scale Modeling Framework. *J. Geophys. Res*., 113, D16105, doi:10.1029/2008JD009905.

Tian, B., D. E. Waliser, R. A. Kahn, Q. Li, Y. L. Yung, T. Tyranowski, I. V. Geogdzhayev, M. I. Mishchenko, O. Torres, and A. Smirnov, 2008: Does the Madden-Julian Oscillation influence aerosol variability? *J. Geophys. Res.,* 113*,* D12215, doi:10.1029/2007JD009372.

Schwartz, M. J., D. E. Waliser, **B. Tian**, D. L. Wu, J. H. Jiang, and W. G. Read, 2008: Characterization of MJO-related upper-tropospheric hydrological processes using MLS. *Geophys. Res. Lett*., 35, L08812, doi:10.1029/2008GL033675.

2007 (1)

Tian, B., Y. L. Yung, D. E. Waliser, T. Tyranowski, L. Kuai, E. J. Fetzer, and F. W. Irion, 2007: Intraseasonal variations of the tropical total ozone and their connection to the Madden-Julian Oscillation. *Geophys. Res. Lett.,* 34, L08704, doi:10.1029/ 2007GL029471.

2006 (2)

Tian, B., D. E. Waliser, and E. J. Fetzer, 2006: Modulation of the diurnal cycle of tropical deep convective clouds by the Madden-Julian Oscillation. *Geophys. Res. Lett.*, 33, L20704, doi:10.1029/2006GL027752.

Tian, B., D. E. Waliser, E. J. Fetzer, B. H. Lambrigtsen, Y. Yung, and B. Wang, 2006: Vertical moist thermodynamic structure and spatial-temporal evolution of the MJO in AIRS observations. *J. Atmos. Sci.*, 63, 2462–2485.

2005 and Before (5)

Tian, B., I. M. Held, N.-C. Lau, and B. J. Soden, 2005: Diurnal cycle of summertime deep convection over North America: A satellite perspective. *J. Geophys. Res.*, 110, D08108, doi:10.1029/2004JD005275.

Tian, B., B. J. Soden, and X. Wu, 2004: Diurnal cycle of convection, clouds, and water vapor in the tropical upper troposphere: Satellites versus a general circulation model. *J. Geophys. Res.,* 109, D10101, doi:10.1029/2003JD004117.

Tian, B., and V. Ramanathan, 2003: A simple moist tropical atmosphere model: The role of cloud radiative forcing. *J. Climate*, 16, 2086–2092.

Tian, B., and V. Ramanathan, 2002: Role of tropical clouds in surface and atmospheric energy budget. *J. Climate*, 15, 296–305.

Tian, B., G. J. Zhang, and V. Ramanathan, 2001: Heat balance in the Pacific warm pool atmosphere during TOGA COARE and CEPEX. *J. Climate*, 14, 1881–1894.

Peer-Reviewed Book Chapters: Total-2, 1st-authored-2

2014 (1)

Tian, B., and D. E. Waliser (2014), Madden-Julian Oscillation, Ch. 198 in *Encyclopedia of Remote Sensing*, edited by E. Njoku, pp. 349–358, doi:10.1007/978-0-387-36699-9_198, Springer New York.

2012 (1)

Tian, B., and D. E. Waliser, 2012: Chemical and biological impacts, Ch. 18 in *Intraseasonal Variability of the Atmosphere-Ocean Climate System (2nd Edition)*, Edited by W. K.-M. Lau and D. E. Waliser, Springer-Verlag, Heidelberg, Germany.

Technical Reports and Miscellaneous Papers: Total-19, 1st-authored-13

2021 (1)

Tian, B., 2021: Test results of CLIMCAPS Level 3 monthly products of air temperature, specific humidity and relative humidity

2020 (1)

Tian, B., E. Manning, E. J. Fetzer, R. Monarrez, and others, 2020: AIRS Version 7 Level 3 product user guide.

Tian, B. and T. J. Hearty, 2020: Atmospheric Infrared Sounder/Advance Microwave Sounding Unit (AIRS/AMSU) Obs4MIPs V2.1 air temperature description.

Tian, B. and T. J. Hearty, 2020: Atmospheric Infrared Sounder/Advance Microwave Sounding Unit (AIRS/AMSU) Obs4MIPs V2.1 specific humidity description.

Tian, B. and T. J. Hearty, 2020: Atmospheric Infrared Sounder/Advance Microwave Sounding Unit (AIRS/AMSU) Obs4MIPs V2.1 relative humidity description.

2018 (3)

Tian, B., 2018: Atmospheric Infrared Sounder/Advance Microwave Sounding Unit (AIRS/AMSU) Obs4MIPs V2 air temperature description.

Tian, B., 2018: Atmospheric Infrared Sounder/Advance Microwave Sounding Unit (AIRS/AMSU) Obs4MIPs V2 specific humidity description.

Tian, B., 2018: Atmospheric Infrared Sounder/Advance Microwave Sounding Unit (AIRS/AMSU) Obs4MIPs V2 relative humidity description.

2017 (2)

Tian, **B.**, E. Fetzer and E. Manning, 2017: Atmospheric Infrared Sounder (AIRS) basic climatology product Algorithm Theoretical Basis Document (ATBD).

Yue, Q., B. Lambrigtsen, **B. Tian**, and others, 2017: Version 6 AIRS/AMSU infrared and microwave combined and AIRS infrared only retrieval comparison and test report.

2013 (2)

Tian, B., E. Manning, E. J. Fetzer, E. Olsen, S. Wong, J. Susskind, L. Iredell, 2013: AIRS/AMSU/HSB Version 6 Level 3 product user guide.

Tian, B., & NCAR Research Staff (Eds), 2013: The climate data guide, AIRS and AMSU tropospheric air temperature and specific humidity.

2012 (1)

Dang, V. T., et al. including **B. Tian**, 2012: AIRS/AMSU/HSB Version 6 Level 2 performance and testing report.

2011 (2)

Tian, B., 2011: Atmospheric Infrared Sounder/Advance Microwave Sounding Unit (AIRS/AMSU) air temperature description.

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