GE PENG, Ph. D

North Caroline State University
Cooperative Institute for Satellite Earth System Studies (CISESS)
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PROFESSIONAL SUMMARY

Over twenty years of technical experience in data analysis, model-data comparison, ocean and atmosphere modeling including model development, implementation, application, process study, and validation. Extensive knowledge and over 10 years of experience in research-to-operation process and scientific data stewardship.

- Expert knowledge of full life cycle of numerical modeling and data evaluation.
- Extensive experience in scientific data management and stewardship research and application.
- Extensive experience in applying general circulation models to atmospheric and oceanic systems to examine their seasonal, inter-annual, and decadal variability using single and multi-processor computers.
- Extensive experience in UNIX/Linux environment using FORTRAN and scripting language, and graphics packages (such as MATLAB and FERRET). Extensive working experience with Windows environment.
- Strong background and working experience in data assimilation and statistical analysis with both observational datasets and model output.
- Knowledge of national and international metadata standards such as FGDC and ISO 19115, NetCDF CF conventions, NOAA scientific data appraisal and archive procedures and stewardship, and life cycle of archiving scientific data.

EDUCATION

PhD, Meteorology, University of Miami, FL (18+ credits in physical oceanography)
M.S., Meteorology, Lanzhou Institute of Plateau Atmospheric Physics, China
B.S., Meteorology, University of Lanzhou, China

EMPLOYMENT

3/2012 – present, *Research Scholar*, North Carolina State University, Asheville, North Carolina
11/09 – 2/12, *Subject Matter Expert*, STG, Inc, NOAA/National Climatic Data Center (NCDC), now a part of NCEI, Asheville, North Carolina
10/09 – 11/09, *Visiting Associate Researcher*, JIFRESSE/UCLA, Los Angeles, California
5/07 – 11/09, *Sr. Physics Engineer II*, Raytheon, Pasadena, California
6/97 – 5/07, *Assistant Scientist*, University of Miami, Miami, Florida
8/93 - 5/97, *Research Associate*, University of Miami, Miami, Florida

PROFESSIONAL ASSOCIATIONS & SERVICES

American Geophysical Union (1992–present)
European Geosciences Union (2019)
International Glaciological Society (2017–2018)
American Meteorological Society (1992–2018)

Earth System Science Data Journal, Chief Editor (2019–present)
WMO Expert Team on Information Management and Technology, Co-Chair (2020–2021)
WMO Stewardship Maturity Matrix for Climate Data Working Group, Lead (2018–2020)
ESIP Information Quality Cluster, Co-Chair (2015–present)

RECENT PUBLICATIONS

Peng, G., C. Lacagnina, R. R. Downs, I. Ivanova, D. F. Moroni, H. Ramapriyan, Y. Wei, and G. Larnicol, 2020: Laying the Groundwork for Developing International Community Guidelines to Effectively Share and Reuse Digital Data Quality Information – Case Statement, Workshop Summary Report, and Path Forward. *Open Science Framework*, doi:10.31219/osf.io/75b92.

Peng, G., J. L. Matthews, M. Wang, R. Vose, and L. Sun, 2020: What Do Global Climate Models Tell Us About Future Arctic Sea Ice Coverage Changes? *Climate*. *8*, doi: 10.3390/cli8010015.

Matthews, J. L., **G. Peng**, W.N. Meier, and O. Brown, 2020: Sensitivity of Arctic Sea Ice Extent Threshold and Its Implication to Ice Coverage Decadal Trends and Statistical Projections. *Remote Sensing*. 12, 807, doi: 10.3390/rs12050807.

Moroni, D. F., Ramapriyan, H., **Peng, G.,** Hobbs, J., Goldstein, J. C., Downs, R. R., Wolfe, R., Shie, C.-L., Merchant, C. J., Bourassa, M., Matthews, J. L., Cornillon, P., Bastin, L., Kehoe, K., Smith, B., Privette, J. L., Subramanian, A. C., Brown, O., & Ivánová, I., 2019: Understanding the Various Perspectives of Earth Science Observational Data Uncertainty. *Figshare*. https://doi.org/10.6084/m9.figshare.10271450.

Peng, G., A. Milan, N. Ritchey, R. P. Partee II, S. Zinn, PE. McQuinn, Lemieux III, R. Ionin, D. Collins, P. Jones, A. Jakositz, and K.S. Casey, 2019: Practical Application of a Stewardship Maturity Matrix for the NOAA OneStop Program. *Data Science Journal, 18.* doi:10.5334/dsj-2019-041.

Peng, G., A. Arguez, W.N. Meier, F. Vamborg, J. Crouch, and P. Jones, 2019: Sea Ice Climate Normals for Seasonal Ice Monitoring of Arctic and Sub-regions. *Data*, 4, 122, doi:10.3390/data4030122.

Bliss, A. C., M. Steele, **G. Peng**, W. N. Meier, and S. Dickinson, 2019: Regional variability of Arctic sea ice seasonal change climate indicators from a passive microwave climate data record. *Environmental Research Letters*, 14, doi:10.1088/1748-9326/aafb84.

Peng, G., M. Steele, A. Bliss, W. Meier and S. Dickinson, 2019: Temporal Means and Variability of Arctic Sea Ice Melt and Freeze Season Climate Indicators Using a Satellite Climate Data Record. *Remote Sensing,* **10**, doi:10.3390/rs10091328.

Ramapriyan, H. K., R. R. Downs, J. Dozier, R. Duerr, M. Folk, J. Frew, N. Hoebelheinrich, C. A. Mattmann, and **G. Peng**, 2019: Bruce Barkstrom (1944–2018), *EOS*, 100. http://doi.org/10.1029/2019EO115561.

Peng, G., J.L. Privette, C. Tilmes, S. Bristol, T. Maycock, J.J. Bates, S. Hausman, O. Brown, and E. J. Kearns, 2018: A Conceptual Enterprise Framework for Managing Scientific Data Stewardship. *Data Science Journal, 17, doi: 10.5334/dsj-2018-015*

Peng, G., 2018: The state of assessing data stewardship maturity – An overview. *Data Science Journal*. **17**, doi: 10.5334/dsj-2018-007

Peng, G., J.L. Matthews, and J.T. Yu, 2018: Sensitivity Analysis of Arctic Sea Ice Extent Trends and Statistical Projections Using Satellite Data. *Remote Sensing*. *10*(2), 230; doi:10.3390/rs10020230

Peng, G. and W. N. Meier, 2017: Temporal and regional variability of Arctic sea-ice coverage from satellite data. *Annals of Glaciology*, **76**, doi:10.1017/aog.2017.32.

Ramapriyan, H., **G. Peng,** D. Moroni, C.-L. Shie, 2017: Ensuring and Improving Information Quality for Earth Science Data and Products. *D.-Lib Magazine,* **23**, doi: 10.1045/july2017-ramapriyan.

Peng, G., N. A. Ritchey, K. S. Casey, E. J. Kearns, J. L. Privette, D. Saunders, P. Jones, T. Maycock, and S. Ansari, 2016: Scientific stewardship in the Open Data and Big Data era - Roles and responsibilities of stewards and other major product stakeholders. *D.-Lib Magazine.* **22**, doi:10.1045/may2016-peng.

Peng, G., L. Shi, S. T. Stegall, J. L. Matthews, and C. W. Fairall, 2016: An Evaluation of HIRS Near-Surface Air Temperature Product in the Arctic with SHEBA Data. *J. Atmos. Oceanic Techno.* **33**, 453–460. doi: 10.1175/JTECH-D-15-0217.1.

Peng, G., J.L. Privette, E.J. Kearns, N.A. Ritchey, and S. Ansari, 2015: A unified framework for measuring stewardship practices applied to digital environmental datasets. *Data Science Journal,* **13**, 231 - 253. doi: 10.2481/dsj.14-049.

Meier, W. N., **G. Peng**, D. J. Scott, and M. Savoie, 2014: Verification of a new sea ice concentration climate data record. *Polar Research*. doi: 10.3402/polar.v33.21004.

Peng, G., H.-M. Zhang, H.P. Frank, J.-R. Bidlot, M. Higaki, S. Stevens, and W.R. Hankins, 2013: Evaluation of various surface wind products with OceanSITES buoy measurements. *Weather and Forecasting*, 28, 1281–1303, doi:10.1175/WAF-D-12-00086.1.

Peng, G., J.-R. Bidlot, H.P. Freitag, C.J. Schreck, III, 2014: Directional bias of TAO daily buoy wind vectors in the central equatorial Pacific Ocean from November 2008 to January 2010. *Data Science Journal,* **13**, 79-87. doi: 10.2481/dsj.14-019.

Peng, G., W.N. Meier, D. J. Scott, and M. Savoie, 2013: A Long-Term and Reproducible Satellite-Based Passive Microwave Sea Ice Concentration Data Record for Climate Study and Monitoring. *Earth System Science Data Journal*. **5**, 311–318, doi:10.5194/essd-5-311-2013.

Shi, L., **G. Peng**, J. Bates, 2012: Deriving surface temperature and humidity from long-term HIRS observation in high latitudes. *J. Atmos. Oceanic. Tech*., 29, 3 – 13. doi: 10.1175/JTECH-D-11-00024.1.