

DARREN L. JACKSON

Cooperative Institute for Research in Environmental Sciences

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PROFESSIONAL EXPERIENCE

Senior Associate Scientist

2004-2020

CIRES & NOAA Physical Sciences Laboratory, Boulder, CO, 2020

- Evaluating NLDAS and National Water Model (NWM) soil moisture and Evaporative Demand Drought Index data for the early warning of drought in the Midwest Drought Early Warning System
- Evaluating PSL soil moisture station data used to assess the predictability of soil moisture in northern California
- Analyzing subpixel variability of satellite-derived ocean surface products for the ATOMIC field project
- Serving as a CIRES Supervisor since 2011

CIRES & NOAA Earth System Research Laboratory, Physical Sciences Division, Boulder, CO 2005-2020

- Constructed and evaluated soil moisture percentile data set from the NWM used for the development of prototype drought monitor products by NOAA Office of Water Prediction (2018-2020)
- Served as the CIRES team lead for the Hydrometeorology Observations and Processes Team (2015-2018)
- Developed and validated algorithms of intercalibrated satellite-derived near-surface temperature and specific humidity and extend product time series to 1987-2016 time period (2015-2018)
- Managed dropsonde funding for NOAA SHOUT field campaign and assist in the field as dropsonde operator and mission scientist (2015-2017)
- Constructed climatology of atmospheric rivers (ARs) from satellite and reanalysis data sets and study impact ARs have on extreme precipitation (2014-2016)
- Developed method that using satellite retrievals to derive gas transfer velocity at ocean surface using COARE gas transfer model and developed propagation of errors model to characterize transfer velocity error (2011-2014)
- Developed method to remove diurnal and inter-satellite biases from HIRS observations (2006-2008)

CIRES & NOAA Environmental Technology Laboratory, Boulder, CO 2004-2005

- Developed multi-instrument retrieval of near-surface temperature and specific humidity using satellite microwave observations
- Examined interannual variations between HIRS upper tropospheric water vapor radiances with those derived from GFDL climate model simulations and reanalysis products
- Developed optimal interpolation method for blending SST observations derived from infrared and microwave satellite observations

Associate Scientist III

CIRES & NOAA Environmental Technology Laboratory, Boulder, CO

1999-2004

- Developed code to limb correct, cloud-clear, and retrieve cloud parameters using 23 years of TOVS/ATOVS 1b data
- Developed upper tropospheric humidity (UTH) retrieval, processed 20 years of UTH data, and performed trend analysis and significance testing on UTH data

Professional Research Assistant

CIRES & NOAA Climate Diagnostic Center, Boulder, CO

1994-1999

- Processed and analyzed the NESDIS HIRS Operational sounding clear column radiance data
- Performed intercomparison of upper tropospheric humidity from TOVS, SSM/I, SAGE, and radiosonde data and compared these observed data to climate model simulations

EDUCATION

Colorado State University, Master of Science, Atmospheric Science, GPA 3.9/4.0

1989 – 1992

Iowa State University, Bachelor of Science, Meteorology, GPA 3.7/4.0, Graduated with Distinction and Honors

1985 – 1989

TECHNICAL SKILLS

- Expertise using UNIX, Linux, and Microsoft OS
- Extensive experience with IDL, FORTRAN, C, Bourne, Bash, Perl
- Expertise analyzing large data sets from satellite, reanalysis, and model data
- Expertise using *in situ* data to evaluate satellite and model data sets
- Expertise with statistical processing, characterizing error, and trend analysis
- Proficiency with Microsoft Office products
- Experience in writing journal articles and preparing oral and poster presentations for conferences

PROFESSIONAL MEMBERSHIPS

- American Meteorological Society** 1986 – 2020
Attend various scientific conferences and served as reviewer for various journals
- American Geophysical Union** 1999 – 2020
Attend various scientific conferences and served as reviewer for various journals

PROFESSIONAL SERVICE

- CIRES Member's Council*
- Representative** 2005 – 2008
Attended CIRES Executive and Fellows' Meetings as representative of the CIRES Members' Council. Reported to CMC the topics of the these meetings and brought forward to the meetings CIRES membership issues.
- CIRES Awards Committee** 2006 – 2007
Served on committee that conducted the advertisement, evaluated nominations, and selected winners of the CIRES science and service awards and served as Chairperson in 2007
- Executive/Fellows Meeting Representative** 2008
Attended CIRES Executive and Fellows' Meetings as representative of the CIRES Members' Council. Reported to CMC the topics of the these meetings and brought forward to the meetings CIRES membership issues
- Reviewer for Professional Journals** 2000-2020
Served as reviewer for Journal of Geophysical Research, Geophysical Research Letters, Journal of Oceanography, Journal of Climate, Journal of Applied Remote Sensing, Journal of Atmospheric and Oceanic Technology

AWARDS

- NOAA Research Employee of the Year** 2017
Award given to several PSD members for rapidly implementing and supporting a complex, multi-platform, multi-organizational field campaign to observe a rare, high-intensity El Niño event
- NOAA Bronze Medal Award** 2017
Award given to PSD members supporting the multi-platform and multi-organizational field campaign of a rare and high-intensity El Nino event. I served as a NOAA SHOUT/ENRR mission scientist for Global Hawk operations.
- NASA Group Achievement Award** 2015
Awarded to the Hurricane and Severe Storm Sentinel (HS3) for outstanding achievements of the HS3 airborne mission to investigate the factors influencing hurricane intensity change. I served as a dropsonde operator during flight operations.

COMMUNITY SERVICE & OUTREACH

- Conducted water cycle presentations at Prospect Ridge Academy, Broomfield, CO 2012 – 2017
- Served as Boy Scout Committee Member for Troop 69 in Louisville, Colorado 2010 – 2015
- Board Member of Commerce Children's Center (Secretary and President), Boulder, CO 2008 - 2009
- Conducted weather presentations at Peak to Peak Charter School, Lafayette, CO 2002 - 2006