

Wayne F. Feltz

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Space Science and Engineering Center
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Curriculum Vitae
November 2023

EMPLOYMENT

2013-Present Associate Director - Science SSEC, Executive Director – Science, CIMSS
1994-2013 Researcher/Scientist UW-Madison Space Science Engineering Center (SSEC)/ NOAA
Cooperative Institute for Meteorological Satellite Studies (CIMSS)

RESEARCH INTERESTS

- Utilization of satellite-based observations to improve nowcasting/forecasting of aviation weather hazards such as turbulence, convection, winds, and volcanic ash
- Remote sensing of thermodynamic state using passive and active instrumentation
- Infrared hyperspectral resolution research toward improved weather observations
- Validation of remotely sensed atmospheric state variables
- Understand impact of future satellite observations through simulation
- Severe weather nowcasting using new atmospheric technologies

SCIENCE TEAM, COMMITTEE, AND WORKING GROUP MEMBERSHIPS

- American Meteorological Society – EUMETSAT Joint Meteorological Satellite Conference Organizational Planning Committee Representative, Boston, MA, USA September 2019
- European Geophysical Union session chair Aviation Meteorology Vienna, Austria 2017-2019
- European Convective Working Group member – Florence, Italy 2016
- European Geophysical Union session chair Vienna, Austria 2016
- European Meteorological Satellite session chair – Toulouse, France 2015
- NOAA GOES-R Aviation Algorithm Working Group Co-Chair 2007-present
- European/American Meteorological Society satellite conference organizational committee member – Vienna 2013 (United States representative)
- American Meteorological Society (AMS) Journal of Atmospheric and Oceanic Technology Editor 2009-2012
- European Meteorological Satellite conference organizational committee member – Poland 2012 (United States representative) – 2011-2012
- United States NOAA/FAA/DOD/DOE Joint Planning and Development Office (JPDO) air traffic improvement task force – weather observations – 2008-2011
- Member of AMS Satellite Committee 2006-2012
- UW-Madison Academic Staff Executive Committee representative 2009-2011
- AMS Committee on Radio Frequency Allocations 2009-2010
- AMS Satellite Conference Session Chair, Phoenix, Arizona 2009
- American Meteorological Society NPOESS Satellite Conference Invited Speaker 2008
- EUMETSAT/AMS Satellite Conference Organizational Committee Member and Session Chair, Amsterdam, Netherlands, 2007
- University of Wisconsin Graduate School Committee on Academic Staff Issues (GS-CASI) Representative 2003-2013

HONORS AND AWARDS

- *National Aeronautics and Space Administration (NASA) Group Achievement Award for Outstanding Achievement in the Success of GOES-R Satellite Launch and for the World's Highest Quality Weather Monitoring and Forecasting, June 15, 2017*
- *Certificate of Appreciation in Recognition as a member of the Committee on Academic Staff Issues 2008-2017*
- *Certificate of Appreciation for serving as Vice Chair of GS-CASI 2013*
- *Selected as a UW-Madison Kauffman Seminar series participant 2013-2014*

- NOAA-CIMSS Collaboration Award 2011
- AMS Journal of Atmospheric and Oceanic Technology Editor 2008-2012
- NASA LaRC Paul Holloway Technology Transition Award 2008
- NASA Honors Group Achievement Award (NASA ROSES ASAP Funding) 2006
- NASA Earth Sciences Application Team Group Award 2005
- NASA Aviation Safety and Security Program Award 2005
- University of Wisconsin-Madison Lettau Award for "Thesis of the Year" April 1995
- Department of Energy Science and Engineering Research Semester Designee 1991
- Northland College Deans Hall of Recognition 1991
- Student Trustee 1989-1991
- Author J. Ingold – Junior Award 1990
- NOAA/NASA Summer Internship Designee 1989-1990

PUBLICATIONS

Authored or coauthored over 30 peer reviewed scientific publications and are available at

https://pubs.ssec.wisc.edu/research_Resources/publications/affiliation/author?authorText=Feltz,%20Wayne%20F.

Gultepe, I. and Feltz, W.F., 2019: **Aviation meteorology: observations and models. Introduction..** *Pure and Applied Geophysics*, Volume: 176, Issue: 5, 2019, pp.1863-1867. Reprint # 8374.

Hoffman, Jay P.; Rahmnes, Timothy F.; Wimmers, Anthony J. and Feltz, Wayne F. **The application of a convolutional neural network for the detection of contrails in satellite imagery.** *Remote Sensing*, Volume 15, Issue 11, 2023, pp.2854. Reprint # 8942.

[Link to PDF](#)

CURRENT RESEARCH

- **Principal Investigator: GOES-R Proving Ground, funded by NOAA (2009–present) -**
- **Principal Investigator: BOEING – Satellite-Based Aviation Cloud Top Height, Turbulence, and Contrail Detection Decision Support Research (2012-Present) – Total Project Research Budget - \$1,100,000**
- **Program Manager: Overall NOAA Cooperative Agreement for Meteorological Satellite Studies (2012–present)**
- **More information at** <https://www.ssec.wisc.edu/staff/wayne-feltz/>

PREVIOUS RESEARCH

- **Principal Investigator: NSF PECAN: Collaborative Research: Low-level Jets in the Nocturnal Stable Boundary Layer: Structure, Evolution, and Interactions with Mesoscale Atmospheric Disturbances (2015-2017)**
- **Principal Investigator: GOES-R Calibration and Validation Field Experiment, funded by NOAA (2012-2015)**
- **Principal Investigator and Co-Chair: GOES-R Aviation Algorithm Working Group funded by NOAA, (2007 - 2012),** http://cimss.ssec.wisc.edu/goes_r/awg/
- **Principal Investigator: “Advanced Satellite Aviation-weather Product” Program (ASAP), funded by NASA LaRC, (2003 - 2010),** <http://cimss.ssec.wisc.edu/asap/>
- **Principal Investigator: Decision Support Systems: Global Atmospheric Turbulence Decision Support System for Aviation, NASA (2008-2011)**
- **Principal Investigator: Ground Systems funded by NOAA (2008–2010)**
- **Co-Investigator: NOAA WVSS-II Validation funded by NOAA, (2005–2010)**
- **Co-Investigator: “Enhancing the UW Meteorological Research Facilities with a Microwave and Lidar Instrumentation to Provide State-of-art Cloud Properties” funded by NSF, (2006–2009)**
- **Principal Investigator: GOES-R Aviation Risk Reduction funded by NOAA, (2007–2010),** http://cimss.ssec.wisc.edu/goes_r/rr/
- **Co-Investigator on proposal “ARM Site Atmospheric State Best Estimates for Aqua: Retrieval, Radiance, and Forward Model Validation”, Dr. David Tobin SSEC/CIMSS PI, Funded by NASA HQ, (2004–2006)**
- **Co-Investigator: “Hazard Analysis Forward Looking Interferometer” funded by NASA, (2007–2008)**
- **Principal Investigator: “The Detection and Tracking of Satellite Image Features Associated with Extreme Physical Events for Sensor Web Targeting Observing Objective Detection of Satellite Enhanced-V and Convective Initiation Signatures” funded by NASA Goddard, funded 2007**
- **Principal Investigator on proposal “Validation of Temperature/Moisture Profiles from the Mesaba Airlines TAMDAR Instrumentation”, funded by NASA LaRC, 2005-2006,** <http://cimss.ssec.wisc.edu/tamdarc/>

- Program Manager/Co-I on proposal “Physical Modeling for Processing Indian Ocean METOC Imager (IOMI) and Geostationary Imaging FTS (GIFTS) Hyperspectral Data”, Dr. Allen Huang (SSEC/CIMSS) PI, funded by DOD Navy, 2002–2006, <http://cimss.ssec.wisc.edu/muri>
- Program Manager/Co-I on Statement of Work “Over Ocean Atmospheric Validation Of Airs Temperature/Moisture Profiles And Radiances”, Dr. Peter Minnett U of Miami RSMAS PI, funded by NASA HQ, 2004-2007
- Program Manager/Lead on proposal “Continuation Of GOES-11 Sounder Derived Product Validation During The 2002 International H₂O Program (IHOP) Experiment”, funded by NOAA USWRP, 2003-2005
- Program Manager/Co-I on proposal “Continuation Of Data Analysis Software Development For The Atmospheric Emitted Radiance Interferometer (AERI)”, Dr. Robert Knuteson (SSEC/CIMSS) PI, funded by DOE Atmospheric Radiation Measurement (ARM) Program, 1996–2002, <http://cimss.ssec.wisc.edu/aeri>

FIELD EXPERIMENT PARTICIPATION

- Participant in STORM-FEST experiment, NOAA Funded, Coffeerville, KS, 1992
- Participant in Point Mugu Refractivity Experiment, DOE ARM Funded, Pt Mugu, CA, 1993
- Participant in OTIS, Oceanic Temperature Interferometric Survey, NASA Funded, Gulf of Mexico, January 1995
- Participant in CAMEX 2, 3, Convection and Atmospheric Moisture Experiment, Wallops Island, Andros Island, NASA Funded, September, 1995, September, 1998
- Participant in numerous SGP CART field campaigns, Southern Great Plains Cloud And Radiation Testbed for Atmospheric Radiation Measurement (ARM) program, Lamont, Oklahoma 1995-2000
- Participant in WVSS Water Vapor Sensing System Validation Experiment, NOAA Funded, 1999
- Participant in IHOP International H₂O Experiment, Oklahoma Panhandle, DOE ARM funded, 2002
- Co-I participant in WVSS-II Water Vapor Sensing System Validation Experiment, Louisville, KY, NOAA Funded, 2005, 2006
- PI participant in TAVE TAMDAR Validation Experiment, NASA Funded, Memphis, TN, 2005
- Participant in GIFTS EDU checkout experiment, NASA Funded, Logan, UT, 2006
- Water Vapor Sensing System – II Validation Participation, NASA funded, 2009-2010
- **Principal Investigator:** Plains Elevated Convection at Night (PECAN) Field Campaign “Collaborative Research: Low-level Jets in the Nocturnal Stable Boundary Layer: Structure, Evolution, and Interactions with Mesoscale Atmospheric Disturbances”, funded by NSF (2015-2017) - NSF funded, 2015-2017