

## VITA for WOLFGANG PAUL MENZEL

### Personal:

Birth: 5 October 1945  
Marital Status: Married  
Citizenship: United States



### Education:

Ph.D. 1974 University of Wisconsin - Madison  
(Theoretical Solid State Physics)  
M.S. 1968 University of Wisconsin - Madison  
B.S. 1967 University of Maryland - College Park  
(with high honors, Omicron Delta Kappa, Phi Beta Kappa)

### Experience:

2007 – present UW Senior Scientist

Currently, I am pursuing research interests in remote sensing of atmospheric temperature and moisture profiles, ozone, carbon dioxide, cloud properties, and surface properties. The current focus of my research is improving the synergy of leo sounders (CrIS, IASI) and geo imagers (ABI, AHI) as well as studying cloud and moisture properties derived from HIRS data over the past four decades. For additional information see <http://www.ssec.wisc.edu/~paulm/research.html>.

2007 – 2011 Verner Suomi Distinguished Professor

In the University of Wisconsin Department of Atmospheric and Oceanic Sciences, I was honored to be selected as the first Suomi Professor. I conducted research, taught students, and performed public service in the socially relevant environmental and climate sciences in the spirit of the inquisitive approach pioneered by Verner Suomi. In the classroom I used my textbook titled “Remote Sensing Applications with Meteorological Satellites” that has been published as a World Meteorological Organization technical document.

1999 – 2007 Chief Scientist for the Office of Research and Applications

As the Chief Scientist for the NOAA Office of Research and Applications, I was responsible for providing guidance on science issues and initiating major science programs for the Director of the Office. This included conducting and stimulating research on environmental remote sensing systems, fostering expanded utilization locally and globally, assisting in evolution of NOAA polar orbiting and geostationary satellite holdings, and guiding ORA science resources into the future.

1999 – 2006 International Expert Team Chairman

As the chairman of the World Meteorological Organization Expert Team on Evolution of the Global Observing System (formerly the Expert Team on Observational Data Requirements and Redesign of the Global Observing System, GOS) that reports to the Commission for Basic Systems (CBS) Open Program Area Group on Integrated Observing Systems, I lead 12 international experts in (a) reviewing observing system experiments indicating the relative contribution from various components of space based and ground based observing systems, (b) recommending actions for the evolution of the surface and space-based components of the GOS and (c) reporting to the CBS on how well the GOS is meeting user requirements in various applications areas and how the GOS performance is evolving in response to the recommended actions. Under my chairmanship, the Expert Team wrote the “Implementation Plan for Evolution of the Space- and Surface- based Sub-systems of the GOS” that was endorsed by the CBS and recently published as WMO TD 1267.

1997 – 2000                      Science Director of Cooperative Institute

As the Science Director of the Cooperative Institute for Meteorological Satellite Studies, I was responsible for the day to day scientific direction of the activities of the CIMSS personnel. This involved coordinating university research principal investigator proposals in response to government funding opportunities, assuring science progress on grants and contracts, fostering peer review publications, and evaluating individual performance. At that time, CIMSS housed about 70 personnel and required about \$4 to 5M annual budget.

1989 - present                      Principal Investigator

As a member of the MODIS (Moderate resolution Imaging Spectroradiometer) science team, I am responsible for developing algorithms for the cloud mask, cloud properties, and atmospheric profiles. Early work included design, test, and application of the MODIS Airborne Simulator, a passive infrared radiometer flown on ER2 aircraft. Flight data at 50 meter horizontal resolution were taken to study cloud radiative properties (emissivity, height, temperature, phase), to detail atmospheric water vapor and stability in convective environments, and to investigate sea surface temperature and suspended sediment concentrations as they relate to the geomorphology of coastlines. After launch of the EOS Terra and Aqua Platforms, the MAS experience was transferred to processing the MODIS 1 km resolution data routinely and studying the global cloud and moisture trends. Cloud trends from the High resolution Infrared Radiation Sounder (HIRS) since 1978 are being combined with those determined from MODIS since 2001.

1983 - 1999                      Team Leader

As Leader of the Advanced Satellite Products Team in the Office of Research and Applications of NOAA/NESDIS, I was responsible for developing, testing and evaluating procedures that show potential for derivation of new satellite products. This activity focused on transferring advances in the research laboratory to the operational weather forecast arena. It involved participation in many NOAA programs aimed at improving the weather services (e.g., National Center's Upgrade, NOAA Operational VAS Assessment, METEOSAT Utilization, GOES I-M Product Assurance, Modernization and Restructuring of NWS, and NOAA-NEXT).

1986 - present                      Adjunct Professor

Currently at the University of Wisconsin, I teach graduate level courses in satellite remote sensing of the earth-atmosphere system covering atmospheric processes (emphasizing radiative transfer) and satellite applications. As adjunct professor in the Atmospheric and Oceanic Sciences Department, I have been advisor to over forty Masters and PhD students (currently four). Previously during my career, I have taught undergraduate physics to science and non-science majors at the University of Wisconsin-Madison. The subjects covered were Calculus, Mechanics, Electricity and Magnetism, Quantum Mechanics, Atomic Physics, Solid State Physics, Thermodynamics, and Relativity.

1983 - 1991                      IRC Working Group Chairman

As the organizer and co-chairman of the International TOVS Working Group (a committee in the International Radiation Commission), I convened its first six conferences (in Igls, Austria during August 1983, February 1985, and March 1988; in Madison, Wisconsin during August, 1986; in Toulouse, France during July 1989; in Airlie, Virginia during May 1991). About one hundred representatives from twenty countries usually attended. Establishing optimal algorithms for processing the NOAA polar orbiting sounding data is the main purpose. I edited the International TOVS Study Conference Report and the Technical Proceedings that were published after each gathering and I continue to serve as the rapporteur on satellite activities to the WMO.

1975 - 1982                      Program Manager

Management of the VAS program at the Space Science and Engineering Center, University of Wisconsin-Madison, involved proposal writing and subsequent defense, personnel coordination and evaluation, and program planning. This ten year five million dollar NASA/NOAA effort supported roughly twenty people and culminated in the demonstration and operational implementation of the VAS.

1967 - present                      Scientist

I have participated in the design and test of spacecraft instrumentation for monitoring the earth-atmosphere system. Calibration of infrared sensors has been one of my specialties. I have been co-investigator on about thirty research proposals and author of many of these. Recent activities have centered on developing techniques for retrieving information regarding the three-dimensional temperature and moisture structure from infrared remote sensing. Investigations of cloud properties and associated rainfall have also been part of this work. Research has involved numerical solution of differential equations, development of approximation algorithms with appropriate numerical stability criteria, analysis of special functions and integrals, numerical integration and differentiation, and matrix algebra. Considerable experience with computers has been acquired.

### **Research Fields:**

#### Satellite Meteorology

Possibilities for remote sensing of the atmosphere from a geosynchronous and polar orbiting spacecraft are being explored. Specifications for vertical temperature and moisture sounders are being established. Techniques are being developed to exploit the new opportunities offered by GOES-8/9/10 to describe the time variations in the structure and behavior of the atmosphere on the synoptic and mesoscale (e.g., hurricanes and tornadoes). Improved determination of cloud properties (height and emissivity) from indirect infrared sensing over decades initially with HIRS on POES and recently with MODIS and AIRS on Terra and Aqua is another research project.

#### Theoretical Solid State Physics

This work probed the electronic energy band structure of crystals. The method of linear combinations of atomic orbitals was applied to perfect crystals for Hartree-Fock self-consistent-field calculations of band structures and associated properties such as electronic wave functions of atoms in crystals, electron charge distributions in crystals under various potentials, and transition probabilities of electron excitations. A first principles calculation of the optical properties of crystals (density of states, imaginary part of the dielectric function) was completed. Electronic energy levels and wave functions of complex atom clusters were also determined. Post doctoral work was focused on the electronic states of point defects in crystals (e.g., deep defect levels in semiconductors).

### **Participation in Select Committees**

Earth Science and Applications from Space: National Imperatives for the Next Decade and Beyond

– Weather and Air Quality Panel Member – 2016 to 2018

Meteosat Mission Planning Team

– since 1999

WMO Expert Team on Observational Data Requirements and Redesign of the Global Observing System

– 1999 to 2005 (chairman)

Atmospheric Climate Requirements (reporting to Strategic Implementation Team of CEOS)

- 1997 to 2006 (co-chairman)

Coordinating Group for Meteorological Satellites

- 1994 to 2005  
GOES Technical Advisory Committee
- 1992 to 2006 (co-chairman)  
NESDIS Winds Product Oversight Panel
- 1989 to 2006 (chairman for three years)  
Earth Observing System (EOS) Moderate-Resolution Imaging Spectrometer (MODIS) Science Team
- investigating cloud properties since 1991  
International TOVS Working Group (a committee in the International Radiation Commission)
- since 1983 (co-chair for five years)  
Council of the NOAA/NASA Cooperative Institute for Meteorological Satellite Studies (CIMSS) at the University of Wisconsin
- since 1984

### **International Schools on Applications with the Newest Multispectral Environmental Remote Sensing Satellites**

Ft Collins 2019, Madison, 2017, Madison, 2013, Potenza, 2012, Brienza, 2011, New Delhi, 2011, Sasso di Castaldo 2009, Perth 2009, Istanbul 2008, Monteponi 2008, Benevento 2007, Ostuni 2006, Krakow 2006, Bertinoro 2004, Maratea 2003, Roma 2002, Bologna 2001. See <http://cimss.ssec.wisc.edu/rss/> for additional information.

### **Selected Honors**

Yuri Gagarin Medal from the Russian Cosmonautics Federation in 2019 – for scientific contribution to the field of environmental remote sensing and international training efforts

Transactions Prize Paper Award from the Geoscience and Remote Sensing Society in 2017 - for IEEE paper on Imager-Sounder Fusion

Special Award from EUMETSAT in 2007 - in recognition of unremitting contributions to satellite remote sensing and exemplary leadership in the cooperation between the world's meteorological satellite operators

Distinguished Alumni Fellow Award from the Department of Physics at UW-Madison in 2007 – for achievements in atmospheric physics

American Meteorological Society Fellow in 2007 – in recognition of outstanding contributions to the atmospheric sciences

Department of Commerce Silver Medal in 2007 - for using geostationary measurements to estimate hourly sea surface temperatures that have expanded understanding of ecosystems, weather, and climate

Department of Commerce Bronze Medal in 2001 – for scientific leadership, both nationally and internationally, in the area of operational space-based remote sensing

Department of Commerce Bronze Medal in 1999 – for the development and implementation of distance learning technology to enhance the expertise of NWS forecasters

ARAD Trainer of the Year in 1997 - for efforts and achievements to provide training in atmospheric physics and atmospheric sounding from satellites to field forecasters

Special Award from the American Meteorological Society in 1997 - for extraordinary leadership efforts in introducing information from the new GOES series to weather forecasters throughout the Western Hemisphere

Department of Commerce Silver Medal in 1994 - for science support for the newest geostationary weather satellite, GOES-8

Department of Commerce Silver Medal in 1993 - for collaboration with European scientists on improved Meteosat calibration and wind measurement

Transactions Prize Paper Award from the Geoscience and Remote Sensing Society in 1992 - for IEEE paper on MODIS

Haydn Williams Fellow at Curtin University, Perth, Australia in 1990 - conducted research and taught for one semester

Outstanding Performance Rating by NOAA 1990-92, 1994-2006

### **Selected Publications (from 158 peer review publications and 771 conference papers since 1974)**

Frey, R.A. and W. P. Menzel, 2019: Observed HIRS and MODIS High-Cloud Frequencies in the 2000s, *Jour. Appl. Meteor. Clim.*, 58, 2469-2478. doi: 10.1175/JAMC-D-19-0060.1.

Menzel, W. P., 2019: History of Geostationary Weather Satellites. Ch-2 of The GOES-R Series. ed. S Goodman et al. pub Elsevier. doi.org/10.1016/B978-0-12-814327-8.00002-0

Weisz, E., and W. P. Menzel, 2019: Imager and sounder data fusion to generate sounder retrieval products at an improved spatial and temporal resolution, *J. Appl. Remote Sens.* 13(3), 034506, doi: 10.1117/1.JRS.13.034506.

Yunheng Xue, Jun Li, W. Paul Menzel, Eva Borbas, Shu-Peng Ho, Zhenglong Li, and Jinlong Li, 2019: Characteristics of Satellite Sampling Errors in Total Precipitable Water from SSMIS, HIRS, and COSMIC Observations. *J. Geophys. Res. Atmos.*, 129, Issue 10, doi: 10.1029/2018JD030045

Di, Di. Jun Li, Wei Han, Wenguang Bai, Chunqiang Wu, and W. P. Menzel, 2018: Enhancing the fast radiative transfer model for FengYun-4 GIIRS by using local training profiles. *J. Geophys. Res. Atmos.*, 129, Issue 10, doi: 10.1029/2018JD029089

Gong, Xinya; Zhenglong Li, Jun Li, C. C. Moeller, C. Cao, W. Wang, and W. P. Menzel, 2018: Intercomparison between VIIRS and CrIS by taking into account the CrIS subpixel cloudiness and viewing geometry, *J. Geophys. Res. Atmos.*, 123, Issue 10, pp.5335-5346. Reprint # 8299.

Menzel, W.P., T. J. Schmit, P. Zhang, and J. Li, 2018: Satellite based atmospheric infrared sounder development and applications. *Bull. Amer. Meteor. Soc.*, 99, 583-603. doi: 10.1175/BAMS-D-16-0293.1

Foster, M. J.; Ackerman, S. A.; Bedka, K.; Di Girolamo, L.; Frey, R. A.; Heidinger, A. K.; Sun-Mack, S.; Philips, C.; Menzel, W. P.; Minnis, P. and Zhao, G. State of the Climate in 2016: Cloudiness. *Bull. Amer. Meteor. Soc.*, **98**, S27-S28.

Weisz, E., B. A. Baum, and W. P. Menzel, 2017: Fusion of satellite-based imager and sounder data to construct supplementary high spatial resolution narrowband IR radiances. *J. Appl. Remote Sens.* 11(3), 036022, doi: 10.1117/1.JRS.11.036022.

Menzel, W. P., R. A. Frey, E. E. Borbas, B. A. Baum, G. Cureton, and N. Bearson, 2016: Reprocessing of HIRS Satellite Measurements from 1980-2015: Development Towards a Consistent Decadal Cloud Record. *Jour. Appl. Meteor. Clim.* 55, 2397-2410. doi:10.1175/JAMC-D-16-0129.1

Rink, T, W. P. Menzel, L. Gumley, and K. Strabala; 2016: HYDRA2 – A Multispectral Data Analysis Toolkit for sensors on Suomi NPP and other current satellite platforms. *Bull. Amer. Meteor. Soc.*, 97, 1283-1294. doi:10.1175/BAMS-D-14-00285.1  
Menzel, W. P., D. C. Tobin, and H. E. Revercomb, 2016: Infrared Remote Sensing with Meteorological Satellites. *Advances in Atomic, Molecular, and Optical Physics*, Vol 65 (editors Ennio Arimondo, Chun C. Lin, Susanne F. Yelin): AAMOP, UK: Academic Press, 2016, pp. 193-264

Plokhenko, Y., W. P. Menzel, R. Knuteson, and H. E. Revercomb, 2016: Mathematical aspects of the meteorological interpretation of satellite hyperspectral infrared measurements part I: statement of the inverse problem for estimation of the cloud absorption vertical profile, *Int. Jour. Rem. Sens.*, 37:7, 1601-1619, doi:10.1080/01431161.2016.1151570

Schmetz, J. and W. P. Menzel, 2015: A Look at the Evolution of Meteorological Satellites - Advancing Capabilities and Meeting User Requirements. *Weather, Climate, and Society*.  
<http://dx.doi.org/10.1175/WCAS-D-15-0017.1>

Baldassarre, G., L. Pozzoli, C. C. Schmidt, A. Unal, T. Kindap, W. P. Menzel, S. Whitburn, P.-F. Coheur, A. Kavgaci, and J. W. Kaiser, 2015: Using SEVIRI fire observations to drive smoke plumes in the CMAQ air quality model: the case of Antalya in 2008. *Atmospheric Chemistry and Physics* 15, 8539-8558, doi:10.5194/acp-15-8539-2015, 2015.

Moeller, C., W.P. Menzel, and G. Quinn, 2014: Review of Terra MODIS thermal emissive band L1B Radiometric Performance. *Proc. SPIE* 9218, Earth Observing Systems XIX, 92180T (September 26, 2014); doi: 10.1117/12.2062138.

Ibrahim, W. Y. S. Batzli, W. P. Menzel, 2014: Agricultural policy effects on land cover and land use over 30 years in Tartous, Syria, as seen in Landsat imagery. *Journal of Applied Remote Sensing* 8 (1), 083506-083506.

Murino, L., U. Amato, M. F. Carfora, A. Antoniadis, B. Huang, W. P. Menzel, and C. Serio, 2014: Cloud Detection of MODIS multispectral images. *J. Atmos. Oceanic Tech.*, 31, 347-365.

Gladkova, I., S. Fazlul, M. Grossberg, R. A. Frey, and W. P. Menzel, 2013: Impact of the Aqua MODIS Band 6 Restoration on Cloud/Snow Discrimination. *J. Atmos. Oceanic Tech.*, 30, 2712-2719. doi: 10.1175/JTECH-D-13-00066.1

Cross, J., I. Gladkova, W. P. Menzel, A. Heidinger, and M. D. Grossberg, 2013: Statistical estimation of a 13.3  $\mu\text{m}$  Visible Infrared Imaging Radiometer Suite channel using multisensor data fusion. *J. Appl. Remote Sens.* 7 (1), 073473. doi: 10.1117/1.JRS.7.073473

King, M. D., S. Platnick, W. P. Menzel, S. A. Ackerman, and P. A. Hubanks, 2013: Spatial and Temporal Distribution of Clouds Observed by MODIS onboard the Terra and Aqua Satellites. *IEEE Trans. Geosci. Remote Sens.*, 51, No. 7, 3826-3852. doi:10.1109/TGRS.2012.2227333

Stubenrauch, C. J., W. B. Rossow, S. Kinne, S. Ackerman, G. Cesana, H. Chepfer, L. Di Girolamo, B. Getzewich, A. Guignard, A. Heidinger, B. C. Maddux, W. P. Menzel, P. Minnis, C. Pearl, S. Platnick, C. Poulsen, J. Riedi, S. Sun-Mack, A. Walther, D. Winker, S. Zeng, G. Zhao, 2013: Assessment of Global

Cloud Datasets from Satellites: Project and Database initiated by the GEWEX Radiation Panel. *Bull. Amer. Meteor. Soc.*, 94, 1031-1049. doi:10.1175/BAMS-D-12-00117.1

Chen, R., C. Cao, and W. P. Menzel, 2013: Intersatellite calibration of NOAA HIRS CO<sub>2</sub> channels for climate studies, *J. Geophys. Res. Atmos.*, 118, 5190-5203. doi:10.1002/jgrd.50447.

Kolat, U., W. P. Menzel, E. Olson, and R. A. Frey, 2013: Very High Cloud Detection in More than Two Decades of HIRS Data. *Jour. Geophys. Res. Atmos.*, 118, 3278-3284. doi:10.1029/2012JD018496

Smith, N., W. P. Menzel, E. Weisz, A. K. Heidinger, and B. A. Baum, 2013: A uniform space-time gridding algorithm for comparison of satellite data products: characterization and sensitivity study. *Jour. Appl. Meteor. Clim.* 52, No. 1, 255-268. doi:10.1175/JAMC-D-12-031.1

Kabatás, B., W. P. Menzel, A. Bilgili, L. E. Gumley, 2013: Comparing Ship Track Droplet Sizes Inferred from Terra and Aqua MODIS Data. *Jour. Appl. Meteor. Clim.*, 52, No. 1, 230-241. doi:10.1175/JAMC-D-11-0232.1

Li, Z.; J. Li, Y. Li, T. J. Schmit, L. Zhou, M. D. Goldberg, and W. P. Menzel, 2012: Determining diurnal variations of land surface emissivity from geostationary satellites. *Jour. Geophys. Res.*, 117, D23302. doi:10.1029/2012JD018279.

Weisz, E., W. P. Menzel, N. Smith, R. A. Frey, E. E. Borbas, and B. A. Baum, 2012: An Approach for Improving Cirrus Cloud Top Pressure/Height Estimation by Merging High Spatial Resolution Infrared Window Imager Data with High Spectral Resolution Sounder Data, *Jour. Appl. Meteor. Clim.*, **51**, No. 8, 1477-1488. doi: <http://dx.doi.org/10.1175/JAMC-D-11-0170.1>

Baum, B. A., W. P. Menzel, R. A. Frey, D. C. Tobin, R. E. Holz, S. A. Ackerman, A. K. Heidinger, and P. Yang, 2012: MODIS Cloud Top Property Refinements for Collection 6, *Jour. Appl. Meteor. Clim.*, **51**, No. 6, 1145-1163.

Joiner, J.; A. P. Vasilkov, P. K. Bhartia, G. Wind, S. Platnick, and W. P. Menzel, 2010: Detection of multi-layer and vertically-extended clouds using A-train sensors. *Atmospheric Measurement Techniques*, Volume **3**, Issue 1, pp.233-247.

Menzel, W. P. and J. M. Phillips, 2009: Satellite meteorology: How it all started, 50 years ago. *Bull. Amer. Meteor. Soc.*, **90**, Issue 10, 1435-36.

Sieglaff, J. M., T. J. Schmit, W. P. Menzel, S. A. Ackerman, 2009: Inferring Convective Weather Characteristics with Geostationary High Spectral Resolution IR Window Measurements: A Look into the Future. *J. Atm. and Oceanic Tech.*, **26**, 1527-1541.

Li, Z., J. Li, W. P. Menzel, J. P. Nelson, III, T. J. Schmit, E. Weisz, and S. A. Ackerman, 2009: Forecasting and nowcasting improvement in cloudy regions with high temporal GOES sounder infrared radiance measurements, *J. Geophys. Res.*, **114**, D09216, doi:10.1029/2008JD010596.

Gunshor, M. M., T. J. Schmit, W. P. Menzel, and D. C. Tobin, 2009: Intercalibration of broadband geostationary imagers using AIRS. *Jour. Atmos. Oceanic Tech.*, **26**, 746-758.

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### **Masters and PhD Students at UW:**

James Anheuser 2020: Low Earth Orbit Sounder Retrieval Products at Geostationary Earth Orbit Spatial and Temporal Scales, MS (at UW-Madison)

Waad Ibrahim 2013: Spatial Analysis of Agricultural Policy and Land Use Land Cover Changes (LULC-C) in Tartous Coastal Province-Syria. PhD (at Brandenburg University of Technology Cottbus-Senftenberg, Germany)

Giuseppe Baldassarre 2011: A performance analysis of advanced MSG-SEVIRI fire detection algorithms (WF\_ABBA and RST\_FIRES) over Italy. PhD (at Univeristy of Basilicata, Italy)

Burcu Kabatas 2011: Detecting Ship Tracks and Estimating their Microphysical Properties in the Atmosphere with MODIS Data. MS (at Istanbul Technical University, Turkey)

Utkan Kolat 2010: Re-evaluation of HIRS Detection of High Clouds. MS.

Chian-Yi Liu 2010: Remote Sensing of the Upper Tropospheric State of Storms using Space-borne High Spectral Resolution Infrared Measurements. PhD.

Zhenglong Li 2009: Improvements and Applications of Atmospheric Soundings from Geostationary Platform. PhD.

Diomaris Padilla 2008: Characterization of Biomass Burning: Fourier Transform Infrared Analysis of Wood and Vegetation Combustion Products. PhD (at City University of New York, New York).

Justin Sieglaff 2007: Sensitivity of High Spectral Resolution Infrared Sounders to Thermodynamic Variability in the Lower Troposphere. MS.

David Santek 2007: The Global Impact of Satellite Derived Polar Winds on Model Forecasts. PhD.

Greg McGarragh, 2004: The Effect of Multilayered Clouds on Cloud Pressure Retrievals in Near-Global MODIS Data. MS.

Giulia Panegrossi, 2004: Learning from Passive Microwave measurements in Improve Microphysics Parameterization in Explicit Cloud Resolving Models. PhD.

Mark Gray, 2003: Precipitable Water Vapor Retrievals using the MODIS Airborne Simulator. MS.

Paolo Antonelli, 2001: PCA: A tool for Processing Hyperspectral Infrared Data. PhD

Hong Zhang, 2001: Estimating Thin Cloud Properties Using an Improved CO2 Slicing Approach. MS.

Chris Schmidt, 2000: Estimation of Total Ozone from GOES Sounder Radiances with High Temporal Resolution. MS.

Bill Badini, 1999: Sensitivity of Tropical Cyclone Simulations to the Assimilation of Satellite Derived Wind Vectors. MS.

Shaima Nasiri, 1999: A Snow/cloud Discrimination Algorithm for the GOES-8 Sounder. MS.

Jason Dunion, 1999: Using Surface Adjusted GOES Low-level Cloud-drift Winds to Improve the Estimation of Tropical Cyclone Outer Wind Radii. MS.

Gideon Kinyodah, 1997: A Study of Mesoscale Convective Systems in Kenya. MS.

John F. Dostalek, 1995: The Sensitivity of CO2 Cloud Parameters to Clear Radiance, Sampling, and Resolution. MS.

Gilberto A. Vicente, 1994: Hourly Retrieval of Precipitation Rate from the Combination of Passive Microwave and Infrared Satellite Radiometric Measurements. PhD.

Susan M. Faust, 1994: Application of Satellite and Ground Data Bases to Determine the Influence of Vegetation and Soil Moisture on Surface Temperature and Outgoing Longwave Radiation. MS.

Jason Yutao Li, 1993: A Two Layer Model for Altitude Determinations from Spaceborne Infrared Measurements. MS.

Kathy I. Strabala, 1991: Optimum Radiometric Spectral Intervals for Cirrus Detection. MS.

Yanni Qu, 1991: A Technique for the Simultaneous Retrieval of Trace Gas Concentrations from Spectral Radiance Observations. MS.

Arlindo J. C. Arriaga, 1991: Water Vapor Information Content of Absorption Lines Observed in the Sun's Infrared Radiance. PhD.

Peter R. Keehn, 1990: Three Water Vapor Cloud Height Techniques Using Geostationary Satellite Data. MS.

Walter J. McKeown, 1990: Inferring Ocean Surface Currents from Time-sequenced VAS Imagery. MS.

Liam E. Gumley, 1990: Atmospheric Correction of Multispectral Atmospheric Mapping Sensor (MAMS) Data and Estimation of Sediment Parameters in Atchafalaya Bay, Louisiana. MS.

Kurt F. Brueske, 1990: Estimates of Daily Evapotranspiration over the Amazon Basin Using GOES VAS Data. MS.

Elaine M. Prins, 1989: Geostationary Satellite Detection of Biomass Burning in South America. MS.

Allen H.-L. Huang, 1989: An Analysis of the Characteristics of Atmospheric Profiles Obtained with the High-resolution Interferometer Sounder (HIS). PhD.

Christopher J. Scheuer, 1989: The Utility of the High Resolution Interferometer Sounder in the Remote Sensing of Land Surface Energetics and Planetary Boundary Layer Development. MS.

Richard Frey, 1988: On the Determination of Cloud Altitude using Infrared Spectral Radiances. MS.

Grant S. Carlson, 1988: Mesoscale Water Vapor Profiles from VAS: An Evaluation of Two Physical Retrieval Methods. MS.

Gary J. Jedlovec, 1987: Determination of Atmospheric Moisture Structure from High Resolution MAMS Radiance Data. PhD.

Allen H.-L. Huang, 1986: The Improvement of Satellite Profiles Retrievals in Cloudy Conditions. MS.

Gin-Rong Liu, 1986: The Use of Visible Data for Improving VAS Satellite Soundings. PhD.

Martin G. Mlynczak, 1984: Possibilities for Limb Sounding the Earth's Atmosphere from a Geostationary Satellite. MS.

James A. Zandlo, 1980: Surface Temperature Determination from an Amalgamation of GOES and TIROS-N Radiance Measurements. MS.

Anthony L. Siebers, 1979: Application of Geostationary Satellite Infrared Observations in Locating Thermal Patterns Conducive to Severe Weather. MS.