

# Curriculum Vitae

## Jae N. Lee

NASA Postdoctoral Program Fellow  
Aerosol and Cloud Group  
Jet Propulsion Laboratory, California Institute of Technology  
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### 1. Research Interests:

- Clouds and their roles in climate feedbacks
  - Analysis of remote sensing cloud observations and model simulations
  - Aerosol and climate interactions
- Atmospheric dynamics and transports:
  - Coupling of lower and upper atmospheres
  - Northern and Southern Annular Mode
- Solar impacts on atmospheric composition and circulation:
  - Modeling and observational studies

### 2. Education:

- **PhD in Marine and Atmospheric Science,**  
School of Marine and Atmospheric Science, Stony Brook University, 2008  
**Thesis Topic:** Changes in Atmospheric Circulation between Solar Maximum and Minimum Conditions in Winter and Summer  
**Thesis Advisor:** Prof. Sultan Hameed
- **M.S. in Atmospheric Science,**  
Stony Brook University, 1987  
**Thesis Topic:** Line by line calculation of H<sub>2</sub>O absorption spectra near infrared  
**Thesis Advisor:** Prof. Robert D. Cess
- **B.S. in Physics,** Yonsei University, Seoul, Korea, 1984

### 3. Experience:

- **2008-present:** NASA Postdoctoral Program Fellow, Aerosol and Cloud Group (Advisor: Dong L. Wu), Jet Propulsion Laboratory, California Institute of Technology  
**Job description:** Research on Aura MLS (Microwave Limb Sounder) and Terra MISR (Multiangle Imaging Spectro Radiometer) observations and their applications to the natural and anthropogenic climate change studies
- **2003-2008:** Research Assistant, School of Marine and Atmospheric Science, Stony Brook University  
**Job description:** Research on the Northern Annular Mode and its relation to solar forcing in the GCM model
- **1994-1995:** Part time Public employee, Korean Meteorological Administration, Long term forecast department  
**Job description:** Mesoscale forecast modeling
- **1991-1992:** Full time Public employee, Atmospheric Scientist, Korean Meteorological Administration  
**Job description:** Development of background CO<sub>2</sub> monitoring system
- **1988-1990:** Research Scientist, Science System & Applications, Inc., Lanham, MD  
**Job description:** Baseline Upper Air Network (BUAN) and TOVS data processing at NESDIS/Satellite Research Lab. (SRL) /NOAA
- **1987-1988:** Research associate, Atmospheric Science group, Stony Brook University  
**Job description:** Research associate for Prof. R.D. Cess in ERBE project
- **1986-1987:** Research assistant, Atmospheric Science group, Stony Brook University  
**Job description:** Master degree work on radiative transfer modeling of water vapor

#### 4. Journal Publications:

- **Jae N. Lee** and Dong L. Wu, 2010: " Multi-year MISR, MODIS, and ISCCP cloud cover measurements and the observed responses to ENSO", in advanced stage of preparation. To be submitted to *Geophys. Res. Lett.*
- **Jae N. Lee**, Dong L. Wu, Gloria L. Manney, Michael J. Schwartz, Alyn Lambert, Nathaniel J. Livesey, Hugh C. Pumphrey, and William G. Read, 2010: "Aura Microwave Limb Sounder Observations of the Polar Middle Atmosphere: Dynamics and Transport of H<sub>2</sub>O and CO", *J. Geophys. Res.*, *in review.*
- Jonathan Jiang and co-authors, **Jae N. Lee**, 2010: "Five-Year Climatology of Upper Tropospheric Water Vapor and Cloud Ice from Aura MLS and GEOS-5". *J. Geophys. Research*, 2009JD013256.
- **Jae N. Lee**, Dong L. Wu, Gloria Manney, and Michael Schwartz, 2009: "Aura Microwave Limb Sounder observations of the Northern Annular Mode in the Mesosphere through the Upper Troposphere, *Geophys. Res. Lett.*, 36, L20807.
- Gloria L. Manney, Michael J. Schwartz, Kirstin Kruger, Michelle L. Santee, Steven Pawson, **Jae N. Lee**, William H. Daffer, Ryan A. Fuller and Nathaniel Livesey, 2009: " Aura Microwave Limb Sounder Observations of Dynamics and Transport During the Record-breaking 2009 Arctic Stratospheric Major Warming, *Geophys. Res. Lett.*, 36, L12815.
- **Jae N. Lee**, D. T. Shindell, and S. Hameed: 2009, "The role of solar forcing in the tropical circulation", *J. Climate*, 22, 5870.
- **Jae N. Lee**, S. Hameed, and D. T. Shindell: 2007, "The northern annular mode in summer and its relation to solar activity variations in the GISS ModelE", *Journal of Atmospheric and Solar-Terrestrial Physics*, 70/5, 730-741.
- **Jae N. Lee** and S. Hameed: 2007 "The Northern Hemisphere Annular Mode in summer, its Physical Significance and its Relation to Solar Activity Variations", *J. Geophys. Res.*, **112**, D15111.
- Hameed, S. and **Jae N. Lee**: 2005, "A mechanism for sun climate connection", *Geophys. Res. Lett.* **32**, L23817.

## 5. Conference contributions

- Invited talk: Solar signals in Earth's climate: How much and Where?: CAWSES-II meeting, June 16-17, 2010, Kyoto, Japan.
- Interannual variability of cloud cover from Terra MISR, MODIS, and ISCCP: ENSO influences; 13<sup>th</sup> Cloud Physics Conference, June 28-July 2, 2010, Portland, OR.
- Aura Microwave Limb Sounder Observations of the Middle Atmosphere: Dynamics and Tracers, AGU 2009 fall meeting, Dec. 14-18, 2009, San Francisco, CA.
- MISR Cloud Variability and Climate Feedbacks over the Pacific; MISR science team meeting, Dec. 10-11, 2009, Pasadena, CA.
- Aura Microwave Limb Sounder Observations of the Middle Atmosphere: From the Mesosphere to the Upper Troposphere, Sep. 14-17, Aura Science Meeting, 2009, Leiden, Netherlands.
- Solar signals in the Troposphere: How Much Can We Find?, July 19-29, MOCA-09, Montreal, Canada.
- Detecting Solar Forcing Signals in MISR Cloud Data, MOCA-09, July 19-29, 2009, Montreal, Canada. (Presented by Dong L. Wu).
- The role of solar forcing in the tropical circulation, SORCE 2008 meeting, Santa Fe, Feb. 4-7, 2008 New Mexico.
- The Northern Annular modes and its relation to solar cycle in the GISS ModelE, CAWSES-07 symposium, Oct. 21-28, 2007, Kyoto, Japan.
- The Northern Annular modes: a mechanism for sun climate connection, AMS middle atmosphere conference, June 8-10, 2005, Boston, MA. (presented by Prof. Hameed).
- The Centers of Action and Sun-Climate interaction, SORCE meeting, October 27-29, 2004, Meridith, NH. (presented by Prof. Hameed).
- Displacements of the Aleutian Low and the Hawaiian High pressure systems during the solar cycle. *Eos Transactions*, AGU, Fall Meeting v. 84, Abstract SH11E-03. December 8-12, 2003, San Francisco, CA. (presented by Prof. Hameed).

## 6. Pending Proposals

- 2009 ROSES "The science of Terra Aqua" program: Dong L. Wu and Jae N. Lee, "Investigation of cloud-climate feedbacks with Terra/Aqua observations and model simulations".

## 7. References:

- Dr. Dong L. Wu, Jet Propulsion Laboratory, California Institute of Technology,  
Tel: 818-393-1954, E-mail: [Dong.L.Wu@jpl.nasa.gov](mailto:Dong.L.Wu@jpl.nasa.gov)
- Dr. Drew T. Shindell, NASA Goddard Institute for space Studies and Columbia University,  
Tel: 212-678-5605, E-mail: [dshindell@giss.nasa.gov](mailto:dshindell@giss.nasa.gov)
- Prof. Robert D. Cess, School of Marine and Atmospheric Science, Emeritus Faculty, Stony Brook University,  
E-mail: [rcess@notes.cc.sunysb.edu](mailto:rcess@notes.cc.sunysb.edu)
- Dr. Gloria L. Manney, Jet Propulsion Laboratory, California Institute of Technology,  
Tel: 505-425-6777, E-mail: [Gloria.L.Manney@jpl.nasa.gov](mailto:Gloria.L.Manney@jpl.nasa.gov)
- Prof. Sultan Hameed, School of Marine and Atmospheric Science, Stony Brook University,  
Tel: 631-632-8319, E-mail: [shameed@notes.cc.sunysb.edu](mailto:shameed@notes.cc.sunysb.edu)
- Prof. Minghua Zhang, School of Marine and Atmospheric Science, Stony Brook University,  
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