

# Curriculum Vitae for Daniel Feldman

## **Personal Data**

Candidate for Doctor of Philosophy  
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## **Education**

High School Diploma, Woodrow Wilson High School, Portland, OR, 1998.  
B.S., Environmental Engineering Science, MIT 2002.  
M.S., Environmental Science and Engineering, Caltech 2004.

## **Professional Experience**

Intel Honors Internship Program in Environmental Health and Safety, 1999.  
Internship Oregon Clearinghouse for Pollution Reduction, 2000.  
Undergraduate Research Opportunities Program, 2001-2002.  
Internship at Los Alamos National Laboratory, 2001.

## **Honors and Awards**

National Merit Scholarship Semifinalist, 1998.  
Advanced Placement Scholar with Distinction, 1998.  
High School Valedictorian, 1998.  
NCAA Division III Cross Country All-American, 2001.  
NCAA Division III Indoor Track All-American (5000 m), 2002.  
MIT Straight-T Award, 2001-2002.  
Malcom G. Kispert Award for Distinguished Scholar-Athlete, 2002.  
MIT CEE Department Richard Lee Russel Award for Continued Graduate Study, 2002.  
NASA Earth Systems Science Fellow 2005-Present.  
Caltech-Y Lisa Guernsey Community Service Award, 2007.

### **Professional Associations: Memberships and Offices**

Chi Epsilon Engineering Fraternity, 2001-Present.

American Geophysical Union, 2004-Present.

### **Service Organizations**

President, Caltech Environmental Task Force, 2003-Present.

Volunteer Coordinator, Caltech Y Community Service Organization, 2003-Present.

### **Science Team Membership**

Orbiting Carbon Observatory Science Team Affiliate, 2003-Present.

Atmospheric Infrared Sounder Science Team Affiliate, 2004-Present.

### **Teaching Experience**

Teaching assistant for MIT course 12.000: Solving Complex Problems. 2001.

Teaching assistant for Caltech course GE 152: Atmospheric Radiation. 2006, 2007.

### **Research Experience**

Hazardous Air Pollutant, Volatile Organic Chemical industrial inventory.

Urban heat island effect parameterization for meso-scale circulation models.

Instrument design and construction for characterizing aerosol particles.

Retrieval of carbon dioxide concentration from thermal emission sounders.

Radiative transfer code design.

Retrieval of thermal infrared cooling rate profiles from radiance measurements.

### **Mission-Specific Research**

NASA EOS A-Train

- CO<sub>2</sub> profile retrieval feasibility using AIRS radiances
- Direct cooling rate retrieval using AIRS radiances
- Cloud radiative effect analysis using MLS IWC products
- Heating/cooling rate analysis using CloudSat 2B-CWC products
- Far-infrared extrapolation of AIRS water vapor, cloud L2 products

Nimbus 4

- Increase in CO<sub>2</sub> observed from difference of AIRS and IRIS-D radiances

## Publications

- Feldman, D. R., K. N. Liou, Y. L. Yung, D. C. Tobin, and A. Berk (2006), Direct retrieval of stratospheric CO<sub>2</sub> infrared cooling rate profiles from AIRS data, *Geophysical Research Letters*, 33, L11803, doi:10.1029/2005GL024680.
- Guo, X., V. Natraj, D.R. Feldman, R.J.D. Spurr, R.L. Shia, S.P. Sander, Y.L. Yung (2007), Retrieval of ozone profile from ground-based measurements with polarization: A synthetic study, *Journal of Quantitative Spectroscopy and Radiative Transfer*, 103 (1), p.175-192.
- Li, L., A. P. Ingersoll, X. Jiang, D. Feldman, and Y. L. Yung (2007), Lorenz energy cycle of the global atmosphere based on reanalysis datasets, *Geophysical Research Letters*, 34, L16813, doi:10.1029/2007GL029985.
- Su, H., J.H. Jiang, Y. Gu, J.D. Neelin, B.H. Kahn, D.R. Feldman, Y.L. Yung, J.W. Waters, N.J. Livesey, M.L. Santee (2007), Tropical upper tropospheric clouds variation with sea surface temperature and their radiative effect, *Journal of Geophysical Research-Atmospheres*, (revised August, 2007).
- Feldman, D.R., K. N. Liou, R.L. Shia, Y. L. Yung, (2007), On the Information Content of the Thermal Infrared Cooling Rate Profile, *Journal of Geophysical Research-Atmospheres*, (revised September, 2007).
- Feldman, D.R., K.N. Liou., M.L. Mlynyczak, D.G. Johnson, Y.L. Yung, (2007), Comparison of Mid- and Far-Infrared Hyperspectral Measurement Determination of Temperature and Water Vapor Profiles and Cloud Forcing, *Journal of Geophysical Research-Atmospheres*, (in preparation).
- Feldman, D.R., K.N. Liou., T.S. L'Ecuyer, Y.L. Yung, (2007), Remote Sensing of Tropical Tropopause Layer Radiation Balance Using A-Train Measurements, *Journal of Geophysical Research-Atmospheres*, (in preparation).

## Conferences

- Feldman, D.R., K.N. Liou, Y.L. Yung, D. Tobin, L. Berk (2005), Direct Retrieval of Radiative Flux-Divergence and Radiative Forcing from Satellite Spectral Measurements, EOS Transactions AGU, 86(52), Fall Meeting Supplemental, Abstract A43B-0084.
- Feldman, D.R., K.N. Liou, Y.L. Yung (2006), Validation of a Direct Cooling Rate Retrieval Method Using AIRS and TES Data, EOS Transactions AGU, 87(52), Fall Meeting Supplemental, Abstract A13B-0891.
- Feldman, D.R., L. Kuai, V. Natraj, Y.L. Yung (2006), Introductory Tools for Radiative Transfer Models, EOS Transactions AGU, 87(52), Fall Meeting Supplemental, Abstract ED43B-0939.

- Feldman, D.R., K.N. Liou, Y.L. Yung (2007), Remote Sensing of TTL Radiation Balance, 14<sup>th</sup> American Meteorological Conference on the Middle Atmosphere, Session on Recent Field Investigations of the TTL, Portland, OR.