

## **Louis Nguyen**

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### ***Professional Preparation***

M.S.	Old Dominion University	Computer Science	2011
B.S.	Old Dominion University	Computer Science	1993

### ***Appointments***

Research Computer Engineer	NASA Langley Research Center	2007-Present
Computer Engineer	NASA Langley Research Center Hampton, VA	2000-2007
Research Scientist	Analytical Science and Materials, Inc Hampton, VA	1993-2000

### ***Summary of Professional Achievements***

Louis Nguyen began his professional career in 1992 and has 19 years of experience working in the field of atmospheric science research. Mr. Nguyen is a Research Computer Engineer in the Climate Science Branch, Science Directorate (SD) at NASA Langley Research Center and works on the Clouds in the Earth's Radiant Energy System (CERES) and the Atmospheric Radiation Measurement (ARM) Programs. The SD conducts atmospheric science research for NASA's Science Mission Directorate and the broader Earth science community with the goal of improving scientific understanding of the Earth's atmosphere and climate system. Mr. Nguyen has both computer sciences expertise and extensive experience in atmospheric sciences research and is responsible for proposing and conducting research and development activities for the purpose of improving scientific and public understanding of Earth radiation budget, climate change, and improving aviation safety.

Mr. Nguyen has expertise in the data management and software development of application for retrieving, analyzing, and publishing numerous meteorological and research satellite and atmospheric science data. He is a satellite and geospatial data specialist and has extensive experience designing, developing, implementing and maintaining atmospheric data acquisition, product processing, and product dissemination systems. In 2003, Mr. Nguyen received a NASA Exceptional Achievement Medal in "For exceptional achievements in development of a state-of-the-art website for the collection and dissemination of satellite data for field missions". He received several other individual and group awards during 2002-2009.

Mr. Nguyen has authored or co-authored 17 referred journal papers, over 60 referencable conference papers and oral presentations, and over 120 other significant contributions. Mr. Nguyen is currently a Phd candidate at Old Dominion University pursuing a Computer Science degree under guidance of Dr. Michael L. Nelson.

## ***Selected Publications of Louis Nguyen***

### **Formal Publications**

Duda, D. P., P. Minnis, and L. Nguyen, 2001: Estimates of cloud radiative forcing in contrail clusters using GOES imagery. *J. Geophys. Res.*, **106**, 4927-4937.

Minnis, P., V. Chakrapani, D. R. Doelling, L. Nguyen, R. Palikonda, D. A. Spangenberg, T. Uttal, R. F. Arduini, and M. Shupe, 2001: Cloud coverage during FIRE ACE derived from AVHRR data. *J. Geophys. Res.*, **106**, 15,215-15,233.

Minnis, P., L. Nguyen, D. R. Doelling, D. F. Young, W. F. Miller, and D. P. Kratz, 2002: Rapid calibration of operational and research meteorological satellite imagers, Part I: Evaluation of research satellite visible channels as references. *J. Atmos. Oceanic Technol.*, **19**, 1233-1249.

Minnis, P., D. R. Doelling, L. Nguyen, W. F. Miller, and V. Chakrapani, 2008: Assessment of the visible channel calibrations of the TRMM VIRS and MODIS on *Aqua* and *Terra*. *J. Atmos. Oceanic Technol.*, **25**, 385-400.

Yang, Y., A. Marshak, J. C. Chiu, W. J. Wiscombe, S. P. Palm, A. B. Davis, D. A. Spangenberg, L. Nguyen, J. Spinhirne, and P. Minnis, 2008: Calibration of solar background signal for retrievals of cloud optical depth from the Geoscience Laser Altimetry System (GLAS). *J. Atmos. Sci.*, **65**, 3513-3527.

Minnis, P., S. Sun-Mack, Y. Chen, M. M. Khaiyer, Y. Yi, J. K. Ayers, R. R. Brown, X. Dong, S. C. Gibson, P. W. Heck, B. Lin, M. L. Nordeen, L. Nguyen, R. Palikonda, W. L. Smith, Jr., D. A. Spangenberg, Q. Z. Trepte, and B. Xi, 2011: CERES Edition-2 cloud property retrievals using TRMM VIRS and Terra and Aqua MODIS data, Part II: Examples of average results and comparisons with other data. *IEEE Trans. Geosci. Remote Sens.*, **49**, 11, doi: 10.1109/TGRS.2011.2144602, in press.

Nguyen, L., P. Minnis, and D. R. Doelling, 2011: Rapid calibration of operational and research meteorological satellite imagers, Part III: Application to geostationary satellite visible channels. Submitted to *J. Atmos. Oceanic Technol.*

### **Referenceable Oral Presentation**

Smith, W. L., Jr., L. Nguyen, D. P. Garber, D. F. Young, P. Minnis, and J. Spinhirne, 1996: Comparisons of cloud heights derived from satellite and ARM surface lidar data. Proc. 6th Annual ARM Science Team Meeting, San Antonio, TX, Mar. 4-7, 1996, 287-291. [http://www.arm.gov/publications/proceedings/conf06/extended\\_abs/smith\\_wl.pdf](http://www.arm.gov/publications/proceedings/conf06/extended_abs/smith_wl.pdf).

Nguyen, L., P. Minnis, J. K. Ayers, and D. R. Doelling, 2001: Intercalibration of meteorological satellite imagers using VIRS, ATSR-2, and MODIS. Proc. AMS 11th Conf. Satellite Meteorology and Oceanography, Madison, WI, Oct. 15-18, 442-445.

Yi, H. Y., P. Minnis, L. Nguyen, and D. R. Doelling, 2001: A proposed multiangle satellite dataset using GEO, LEO, and Triana. Proc. AMS 11th Conf. Satellite Meteorology and Oceanography, Madison, WI, Oct. 15-18, 570-573.

Nguyen, L., P. Minnis, D. F. Young, W. L. Smith, Jr., P. W. Heck, A. D. Rapp, and M. M. Khaiyer, 2002: Use of multi-resolution data to account for partially cloud-filled pixels. Proc. 12th ARM Science Team Meeting, April 8-12, St. Petersburg, FL, 8 pp. Available at [http://www.arm.gov/publications/proceedings/conf12/extended\\_abs/nguyen-l.pdf](http://www.arm.gov/publications/proceedings/conf12/extended_abs/nguyen-l.pdf).

Minnis, P., W. L. Smith, Jr., L. Nguyen, D. A. Spangenberg, P. W. Heck, R. Palikonda, J. K.

Ayers, C. Wolff, and J. J. Murray, 2004: Near-real time cloud properties and aircraft icing indices from GEO and LEO satellites. Proc. SPIE 49<sup>th</sup> Ann. Mtg., Weather and Environ. Satellties Conf., Denver, CO, August 2-3 5549, 145-155. (Invited)

Nguyen, L., D. R. Doelling, P. Minnis, and J. K. Ayers, 2004: Rapid technique to cross calibrate satellite imager visible channels. Proc. SPIE 49<sup>th</sup> Ann. Mtg., Earth Observing Systems IX Conf., Denver, CO, August 2-6, 5542, 227-235.

Minnis, P., L. Nguyen, R. Palikonda, D. Spangenberg, M. L. Nordeen, Y. Yi, and J. K. Ayers, 2004: Toward a three-dimensional near-real time cloud product for aviation safety and weather diagnoses. Proc. AMS 11<sup>th</sup> Conf Aviation, Range, and Aerospace. Hyannis, MA, October4-8, CD-ROM, 8.11.

Palikonda, R., D. Phan, M. M. Khaiyer, M. L. Nordeen, J. K. Ayers, D. A. Spangenberg, D. R. Doelling, Y. Yi, P. Minnis, L. Nguyen, Q. Trepte, and S. Sun-Mack, 2006: NASA-Langley web-based operational real-time cloud retrieval products from geostationary satellites. Proc. AMS 14th Conf. Satellite Meteorol. and Oceanog., Atlanta, GA, 29 Jan. - 2 Feb., CD-ROM, P4.18.

Nguyen, L., J. J. Murray, P. Minnis, D. P. Garber, J. K. Ayers, D. A. Spangenberg, and M. L. Nordeen, 2006: Comparison of TAMDAR GLFE icing reports with NASA Advanced Satellite Aviation-weather Products (ASAP) in-flight icing parameters. Proc. AMS 10th Symp. Integr. Observing and Assimil. Systems for Atmos., Oceans, and Land Surf. (IOAS-AOLS), Atlanta, GA, 29 Jan. - 2 Feb., CD-ROM, P9.14.

#### Other Significant Contributions

Nguyen, L., J. K. Ayers, D. R. Doelling, P. Minnis, and D. F. Young, 2000: Rapid intercalibration of operational and research meteorological satellite imagers. IRS 2000 International Radiation Symposium, St. Petersburg, Russia, July 24-29.

Wang, D., P. Minnis, and L. Nguyen, 2003: 4D data reanalysis/assimilation with surface, radar, and extensive field measurements. CRYSTAL-FACE Science Team Meeting, Salt Lake City, UT, February 24-28.

Nguyen, L., D. R. Doelling, D. N. Phan, Y. Yi, P. W. Heck, W. L. Smith, Jr., and P. Minnis, 2003: Interactive web-based tools for comparing and retrieving satellite-derived cloud properties during CRYSTAL-FACE. CRYSTAL-FACE Science Team Meeting, Salt Lake City, UT, February 24-28.

Minnis, P., L. Nguyen, S. Sun-Mack, Y. Chen, M. Khaiyer, R. Palikonda, 2005: Development of three-dimensional cloud fields using multiple data sources. 3rd Pan-GCSS Meeting on Clouds, Climate and Models, Athens, Greece, May 16-20, 2005.

Nguyen, L., P. Minnis, D. R. Doelling, and D. P. Garber, 2005: Calibration of operational geostationary satellite visible sensors using VIRS, Terra- and Aqua-MODIS. Presented at 2005 CALCON Tech. Conf., Logan, UT, August 22-25.

Nguyen, L., P. Minnis, S. Sun-Mack, Y. Chen, Q. Trepte, M. L. Nordeen, and P. W. Heck, 2006: Multi-resolution retrieval of fractional cloudiness for CERES using MODIS. AMS 12th Conf. Atmos. Radiation, Madison, WI, July 10-14, P4.20.

Nguyen, L., P. Minnis, D. R. Doelling, V. Chakrapani, and D. A. Spangenberg, 2006: Intercalibration of FY-2C, MTSAT, Meteosat-8, and GOES imager sensors using Terra and Aqua MODIS. AGU Western Pacific Geophysics Mtg., Beijing, China, July 24-27.

- Nguyen, L., P. Minnis, D. R. Doelling, V. Chakrapani, and D. A. Spangenberg, 2007: Inter-calibration of operational geostationary satellite imagers using MODIS: Results from an automated calibration system. Joint 2007 EUMETSAT Meteorol. Satellite Conf. & 15<sup>th</sup> AMS Satellite Meteorol. & Oceanog. Conf., Amsterdam, The Netherlands, September 24-28.
- Nguyen, L., P. Minnis, F. Chang, D. Winker, S. Sun-Mack, D. Spangenberg, and R. Austin, 2007: Comparison of cloud properties from CALIPSO-CloudSat and geostationary satellite data. A-Train-Lille 07 – Symposium, Lille France, October 22-25.
- Nguyen, L., P. Minnis, D. A. Spangenberg, R. Palikonda, D. N. Phan, and M. L. Nordeen, 2008: Validation of real-time GOES products using GLAS and CALIPSO data. AMS 5<sup>th</sup> GOES Users' Conference, New Orleans, LA, January 23-24, P1.63.
- Nguyen, L., P. Minnis, W. L. Smith, J. K. Ayers, C. R. Yost, M. L. Nordeen, D. A. Spangenberg, R. Palikonda, T. L. Chee, and M. J. McGill, 2008: Validation of GOES and MODIS satellite-derived cloud properties using TC4 data. NASA TC4 Science Team Meeting, Virginia Beach, VA, February 26-29.
- Nguyen, L., D. R. Doelling, P. Minnis, L. A. Avey, D. A. Spangenberg, and T. L. Chee, 2008: Post-launch calibration of operational geostationary satellites using MODIS. 2008 Intl. Radiation Symp., Foz du Iguacu, Brazil, Aug. 3-8, 523F.
- Minnis, P., L. Nguyen, and D. Spangenberg, 2008: A combined GLAS and satellite imager dataset. ICESat Sci. Team Mtg., Buffalo, NY, Oct. 6-8.
- Minnis, P., W. L. Smith, Jr., L. Nguyen, R. Palikonda, D. Spangenberg, S. Houser, C. Yost, M. Khaiyer, F.-L. Chang, and P. W. Heck, 2008: Diagnosing aircraft icing conditions using geostationary satellite data. NASA Appl. Sci. Weather Prog. Review, Boulder, CO, 18-19 Nov.
- Minnis, P., L. Nguyen, R. Palikonda, P. W. Heck, D. A. Spangenberg, M. Khaiyer, J. K. Ayers, W. L. Smith, Jr., F. L. Chang, Q. Z. Trepte, D. R. Doelling, C. R. Yost, L. A. Avey, and T. L. Chee, 2009: Retrieving cloud and radiation parameters in near-real-time from global geostationary satellite data. 16<sup>th</sup> AMS Conf. Sat. Meteorol. & Oceanog., Phoenix, AZ, 12-15 January, JP1.30.
- Minnis, P., L. Nguyen, R. Palikonda, P. W. Heck, D. A. Spangenberg, D. R. Doelling, J. K. Ayers, W. L. Smith, Jr., M. M. Khaiyer, Q. Z. Trepte, L. A. Avey, F.-L. Chang, C. R. Yost, T. L. Chee, and S. Sun-Mack, 2008: Near-real time cloud retrievals from operational and research meteorological satellites. *Proc. SPIE Europe Remote Sens. 2008*, Cardiff, Wales, UK, 15-18 September, **7107-2**, 8 pp.
- Nguyen, L., M. L. Nordeen, T. L. Chee, D. R. Doelling, P. Minnis, and M. L. Nelson, 2010: Alternative method for data fusion of NASA CERES and A-TRAIN datasets: An evaluation of triplestore. *AMS 13<sup>th</sup> Conf. Atmos. Rad.*, Portland, OR, June 27 – July 2, P2.24.
- Nguyen, L., T.L. Chee, P. Minnis, D.C. Mangosing, D.A. Spangenberg, S. Sun-Mack, and C. Trepte, 2010: Mashup App for Visualization of A-Train Products: Promoting Scientific Mashup. *Intl. Symp. A-Train Satellite Constellation*, New Orleans, LA, Oct. 25-28.
- Nguyen, L., T. L. Chee, D.P. Garber, and P. Minnis, 2011: RSS Feed and Web App for Predicting and Tracking Satellites. *2011 Satellite Direct Readout Conference*, Maimi, FL, April 4-8.