

GREGORY FLESCH

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Education

- University of Southern California
 - M.S. Computer Science (2001)
 - California State Polytechnic University, Pomona
 - B.S. Computer Science (1993, cum laude)
 - UCLA Extension Classes
 - Digital Signal Processing Classes, 2004-2005
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Work Experience

- Jet Propulsion Laboratory (1992-Present)
 - Software Cognizant Engineer for Tunable Laser Spectrometer (TLS) on MSL (2005-Present)
 - Data Analyst (Member of SAM Science Team) for TLS on MSL (2008-Present)
 - Systems Engineer (Assistant) for TLS on MSL (2005-2008)
 - Software Engineer for 12 high altitude aircraft (ER2, WB-57) and balloon-borne instruments (ALIAS, ALIAS-II, JLH spectrometers) (1993-2005)
 - Data Analyst for high-altitude spectrometers (1998-2005)
 - NASA Principal Investigator (PIDDP 2011)
 - NASA Co-Investigator (MIDP 2003)
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Professional Skills

- Software and Systems Engineering for Instrument Control
 - Autonomous and adaptive instrument control for tunable laser absorption spectrometers
 - Instrument design, optimization, fabrication and troubleshooting
- Software Engineering for Scientific Applications
 - Spectroscopic Simulation tools
 - Highly automated web-based data processing software tools for TLS/MSL spectral data
 - Data-Mining and Visualization applications
 - Data translation and integration for very large data sets
 - BrainBench certified for Linux/System/Network/SecurityAdministration
- Selected for Systems Engineering Advancement (SEA) Program (1 year mentored program) 2008
- Strong mathematics and signal processing background
- Laser/Optics/Chemical laboratory operations and safety manager

Awards

- NASA Exceptional Achievement Medal (2002)
- 9 NASA Group Achievement Awards (1994-2005)
- 6 JPL Technical Merit Bonuses (1999-2012)

Publications

- “The First Volatile, Isotope and Organic Analysis of Solid Samples with the Mars Curiosity Rover: Insights into Martian Fines” (co-author) submitted to Science and in review (April 2013)
- “Non-Detection of Methane in the Mars Atmosphere by the Curiosity Rover” C. R. Webster, P. R. Mahaffy, S. K. Atreya, G. J. Flesch and K. A. Farley submitted to Nature Geoscience and in review (March 2013)
- “The Sample Analysis at Mars Investigation and instrument suite” (co-author) Space Science Review (2012)
- “Adaptive Tunable Laser Spectrometers” G. Flesch and D. Keymeulen, 2010 IEEE aerospace, Big Sky, MT, March 2010.
- “Tunable Laser Paleothermometer for Determining Climate Change” C.R. Webster, F. Carsey, M. Hecht, and G.J. Flesch, Applied Optics, 2003.
- “Airborne Laser Isotope Spectrometer (ALIS) for Measuring Terrestrial $^{13}\text{C}/^{12}\text{C}$ and $^{18}\text{O}/^{16}\text{O}$ in Atmospheric Carbon Dioxide”, C.R. Webster, L. Christensen, and G.J. Flesch, Applied Optics, 2003
- “Mars Laser Hygrometer, C.R. Webster, G.J. Flesch, R. Haberle, and J. Bauman, Applied Optics, 43, 4436-4445, 2004
- “The Construction of a Unified, High-Resolution Nitrous Oxide Data Set for ER-2 Flights During SOLVE” (co-author) SOLVE/THESEO special issue J. Geophys. Res. (2001).
- “Quantum cascade laser measurements of stratospheric methane (CH_4) and nitrous oxide (N_2O)” (co-author) Applied Optics, 38, 4609-4622, 1998.
- “Airborne Laser Infrared Absorption Spectrometer (ALIAS-II) for In situ Atmospheric Measurements of N_2O , CH_4 , CO , HCl , and NO_2 from Balloon or RPA Platforms” (co-author) Applied. Optics, December 1999.
- “Evolution of HCl Concentrations in the Lower Stratosphere from 1991 to 1996 Following the Eruption of Mt. Pinatubo” (co-author) Geophysical Research Lett. 25, 995-998, (1998).