Dr. Samuel LeBlanc

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Education

Ph.D. Atmospheric and Oceanic Sciences – *Univ. of Colorado, Boulder, Colorado* **2011-2014**
M.Sc. Atmospheric and Oceanic Sciences – *Univ. of Colorado, Boulder, Colorado* **2008-2011**
B.Sc. Specialization in Physics – *Univ. of Ottawa, Ottawa, Ontario, Canada* **2003-2008**

Professional and Research Experience

Research Scientist – *Bay Area Environmental Research/NASA Ames Research Center* **2016-now**
Sunphotometer-Satellite team within the Earth Science Division
- PI of 4STAR instrument for ORACLES, member flight planning/scientist team.
- Science PI for technology development muSSTAR, miniaturization of 4STAR.
- Quantify global direct aerosol radiative effect from combined MODIS-OMI-CALIPSO.

NASA Postdoctoral Fellow – *ORAU/NASA Ames Research Center* **2014-2016**
Advisor: Dr. Jens Redemann, Sunphotometer-Satellite team within the Earth Science Division
- Remote sensing retrieval of cloud properties from spectral zenith radiance measurements.

Research Assistant – *LASP/University of Colorado* **2009-2014**
Advisor: Dr. Peter Pilewskie, Atmospheric Radiation Group within the ATOC Department
- Develop atmospheric remote sensing techniques from shortwave radiation measurements using spectral features modulated by both aerosol and clouds.
- Development and operation of the Skywatch Observatory (http://skywatch.colorado.edu).

Synergistic Activities

Support of instrument deployments (SSFR and 4STAR) during multiple field campaigns
Instrument scientist for CalNex(2010), ATTREX(2011-2013), DC3(2012), PODEX(2013), SEAC4RS(2013), ARISE(2014), NAAMES(2015-2020), KORUS-AQ(2016), ORACLES(2015-2020), Canada's COSR (2018-now).

Instrument design and capability development
Science analysis and design review of next iteration of 4STAR instrument (4STARB; 5STAR).
Software development for active stabilization of radiometric instruments onboard aircraft.
Helped increase the Technical Readiness Level (TRL 7 to 9) of SSFR.

Selected publications and presentations

Combined 90 published works, 3 first-author peer-reviewed journal articles, 2 published software packages, 3 publications in prep:

LeBlanc, S. E., et al: Above Cloud Aerosol Optical Depth from airborne observations in the South-East Atlantic, Atmos. Chem. Phys., 1–40, doi:10.5194/acp-2019-43, 2020.

Gupta, S., **et al**: Impact of the Variability in Vertical Separation between Biomass-Burning Aerosols and Marine Stratocumulus on Cloud Microphysical Properties over the Southeast Atlantic, Atmos. Chem. Phys. Discuss. Doi:10.5194/acp-2020-1039, in review, 2021.

LeBlanc, S. E., et al.: A spectral method for discriminating thermodynamic phase and retrieving cloud optical thickness and effective radius using transmitted solar radiance spectra, Atmos. Meas. Tech., 8, 1361-1383, doi:10.5194/amt-8-1361-2015, 2015.

LeBlanc, S. E., et al.: Spectral aerosol direct radiative forcing from airborne radiative measurements during CalNex and ARCTAS, J. Geophys. Res., 117, D00V20, doi:10.1029/2012JD018106, 2012.