

Curriculum Vitae

PERSONAL INFORMATION

Emilie FEDELE MURPHY

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EDUCATIONAL BACKGROUND

- 2005 **Master of Science and Technology**, Ocean Sciences, Environment and Systems
Specialty : Measurement, Instrumentation and Surveillance of Earth surfaces, Ocean,
Atmosphere and soil systems,
University of "Sud Toulon-Var", La Garde, France
- 2003 **Bachelor of Science**, Applied Physics
Specialty : Ocean, Atmosphere and Soil systems,
University of "Sud Toulon-Var", La Garde, France
- 2001-2002 **Scientific preparatory class of engineer schools**
Specialty : Physics and Chemistry,
"Dumont d'Urville" high-school, Toulon, France

EMPLOYMENT

- 2016-current **Senior Faculty Specialist**, Department of Geographical Sciences, University of Maryland,
College Park, MD, USA
- 2009-2016 **Faculty Research Assistant**, Department of Geographical Sciences, University of Maryland,
College Park, MD, USA
- 2006-2009 **Research Engineer**, Laboratoire des Sciences du Climat et de l'Environnement(LSCE/CEA), Gif-
sur-Yvette, France
- 2005 **Research Engineer**, Service Hydrographique et Océanographique de la Marine (SHOM), Brest,
France
- 2004 **Laboratory Technician**, Université Internationale de la Mer (UIM),
Cagnes-sur-Mer, France
- 2001-2005 **Human resource Administrator**, France Telecom, Toulon, France

WORK EXPERIENCE

As Senior Faculty Specialist (current)

- Data processing and analysis of MODIS, VIIRS and AVHRR satellite data in support to scientific studies :
 - Directional effect corrections
 - BRDF-Atmospheric correction coupling
 - Ground measurements/satellite data coupling
 - Albedo
- General programming using IDL and Python scripts
- Development of the Surface Reflectance Climate Data Record from MODIS Aqua-Terra and AVHRR-NOAA satellites.
- Maintenance and development of the SALSA team website <https://salsa.umd.edu/>

As Research Engineer (2006-2009)

- Development and maintenance of the operational processing algorithms for the Parasol satellite
- Full development of a database of Land Surface Directional Signatures derived from the measurements of the Parasol satellite
- Redaction of the User Manual for the above-mentioned database
- Analysis of long time series of satellite data (AVHRR and MODIS) :
 - Cloud/ snow/ aerosol rejection
 - Impact of directional corrections
 - Choice of best directional model
- Data processing in support to scientific studies using Parasol data :
 - Cloud Droplet Radius estimates
 - Wind speed retrievals
 - Cloud microphysics analysis
- General programming using IDL, Python and Fortran scripts

As Research Engineer Trainee (2005)

- Use of AVHRR NOAA Sea Surface Temperature data to investigate the different oceanographic processes in the Gascogne Golf (Atlantic Ocean)
- Statistical analysis and implementation of "quick look" of ocean dynamic processes
- Programming using shell and Fortran scripts, ENVI software and GMT
- Participation in the planned cruise in the Gascogne Golf to perform many in-situ measurements of the different oceanographic studied processes

As Laboratory Technician Trainee (2004)

- Physical, chemical and bacteriological analysis on the sea water
 - Acquisition of the experimental techniques to evaluate the water quality
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BOOK

Murphy, Emilie Fédèle. *Analyse de processus océanographiques dans le golfe de Gascogne: à partir de données satellitales de température de surface de la mer*. Éditions universitaires européennes, 2014.

RESEARCH PAPERS

B. Franch, E. F. Vermote, S. Skakun, J. C. Roger, I. Becker-Reshef, **E. Murphy**, C. Justice (2019). Remote sensing based yield monitoring: Application to winter wheat in United States and Ukraine. *International Journal of Applied Earth Observation and Geoinformation*, Vol. 76, April 2019, p. 112-127.

I. Becker-Reshef, B. Franch, B. Baker, E. Murphy, A.E. Santamaria-Artigas, M. Humber, E.F. Vermote (2018). Prior Season Crop Type Masks for Winter Wheat Yield Forecasting: A US Case Study. MDPI. *Remote Sensing*

Franch, B., Vermote, E. F., Roger, J. C., **Murphy, E.**, Becker-Reshef, I., Justice, C., ... & Baret, F. (2017). A 30+ Year AVHRR Land Surface Reflectance Climate Data Record and Its Application to Wheat Yield Monitoring. *Remote Sensing*, 9(3), 296.

Bréon, F. M., Vermote, E., **Murphy, E. F.**, & Franch, B. (2015). Measuring the directional variations of land surface reflectance from MODIS. *IEEE Transactions on Geoscience and Remote Sensing*, 53(8), 4638-4649.

Sobrino, J. A., Franch, B., Oltra-Carrió, R., Vermote, E. F., & **Fédèle, E.** (2013). Evaluation of the MODIS Albedo product over a heterogeneous agricultural area. *International journal of remote sensing*, 34(15), 5530-5540.

Franch, B., Vermote, E. F., Sobrino, J. A., & **Fédèle, E.** (2013). Analysis of directional effects on atmospheric correction. *Remote Sensing of Environment*, 128, 276-288.

Maignan, F., Bréon, F. M., **Fédèle, E.**, & Bouvier, M. (2009). Polarized reflectances of natural surfaces: Spaceborne measurements and analytical modeling. *Remote Sensing of Environment*, 113(12), 2642-2650.

OTHER SKILLS

Computing

Programming Languages : IDL, Python, Ksh

Web Development : HTML, CSS, PHP, MySQL, JavaScript

Softwares : Microsoft Office

Operating systems : Unix, Linux, Windows, Mac OS

Languages

French and English