

FLORIAN M. SCHWANDNER, PH.D.

NASA-JPL volcanologist, broad experience, easily bridges AOGS SE with AS, BG, IG, PS.

Swiss Federal Institute of Technology (ETH)
Freie Universität Berlin

Geochemistry
Geology

Dr. rer. nat. 2002
Diplom (M.Sc. equiv.), 1997

Dr. Schwandner is a geochemist / volcanologist specialized in applied ground- and space-based monitoring of gas emissions from volcanoes and fracture systems, though has used seismometers as well. He has worked and lived in Asia for many years, and has an Asian-majority family. His broad international experience spans atmospheric chemistry, carbon climate science, applied volcanology, structural geology, autonomous sensor networks, multidisciplinary natural hazards databases, ecology and organic geochemistry, astrobiology, and remote sensing. He currently leads JPL's point source detection activities for JAXA's GOSAT, and NASA's OCO-2 satellite missions, and is on multiple space and airborne mission science and development teams. He has since 2007 co-lead global community initiatives toward early volcanic precursor detection, and served on non-profit boards. At AOGS, he Solid Earth section secretary, and on the editorial board of AOGS' flagship journal, *Geoscience Letters*.

Selected SE Publications:

- Schwandner, F.M.**, et al., (2017). Space-Borne Detection of Localized Carbon Dioxide Sources. *SCIENCE*, 358 (6360), eaam5782.
- Velazco, V. A., (...), **F. M. Schwandner**, et al. (2016). TCCON Philippines: Toward Quantifying Atmospheric Carbon in Southeast Asia, *Climate, Disaster and Development Journal*, 2(2): 1-12.
- Pieri, D., **Schwandner, F.M.**, et al. (2016), Enabling a global perspective for deterministic modeling of volcanic unrest. *U.S. National Research Council, NASA Decadal Survey White Paper*, 18pp. Volcanology community strategy paper.
- Dietrich, V.J., (...) and **F.M. Schwandner** (2016). Fluid Geochemistry of the Hydrothermal System. In: V.J. Dietrich et al. (Eds.), "*Nisyros Volcano*", Springer, Berlin, ISBN 978-3-319-55458-7.
- Schwandner, F.M.** (2014). *The Orbiting Carbon Observatory 2 – Opportunities for Deep Carbon Research*. Deep Carbon Observatory Newsletter, July 2014. <https://deepcarbon.net>
- Schwandner, F.M.**, et al. (2013). Halocarbons and other trace heteroatomic organic compounds in volcanic gases from Vulcano (Aeolian Islands, Italy). *Geochimica Cosmochimica Acta* 101, 191-221.
- Mazot A., **Schwandner, F.M.**, et al. (2013). CO₂ discharge from the bottom of volcanic Lake Rotomahana, New Zealand. *Geochemistry, Geophysics, Geosystems* 15(3): 577-588.
- Windman, T1, Zolotova, N., **Schwandner, F.**, and Shock, E. (2007). Formate as an Energy Source for Microbial Metabolism in Chemosynthetic Zones of Hydrothermal Ecosystems. *Astrobiology* 7(6):873-890.
- Gogu, R.C., (...), **Schwandner, F.M.**, et al. (2006). A geo-spatial database concept for data-management of dormant volcanoes. *Computers and Geosciences* 32(1): 29-41.
- Schwandner F.M.**, et al. (2004). Diffuse emission of organic trace gases from the flank and crater of a quiescent active volcano (Vulcano, Aeolian Islands, Italy). *JGR D109*, D04301, 20p.
- Schwandner, F.M.** (1998). Polyphase Meso-Cenozoic Structural Development on Poros Island (Greece). *Bull. Geol. Soc. Greece* 32 (1): 129-136.

Professional Background:

2016-current	<i>Project Scientist III</i>	JIFRESSE (UCLA), post at NASA-JPL.
2013-2015	<i>Senior Fellow (NPP)</i>	Carbon Cycle Group, NASA-JPL (USA).
2009-2012	<i>Senior Research Fellow</i>	Earth Observatory of Singapore (Singapore).
2006-2009	<i>Research Scientist II (faculty)</i>	Colorado State Univ., Atmos. Sciences (USA).
2002-2006	<i>Postdoctoral appointments</i>	ETH Zürich (Switzerland) and Arizona State University (USA).

Selected Awards and Professional Service:

- Geoscience Letters editorial board (2017 – present)
- Volcanology Secretary, Asia Oceania Geoscience Society (AOGS) (2016-present).
- Member, Community Network for Volcanic Eruption Response (CONVERSE) (2018 – present)
- Board Director for Strategic Development, International STEM Society for Human Rights (2015-2016).
- Multiple NASA team awards (2014, 2017, 2018). NAI CAN 8 team member.
- NASA/JAXA Science & CalVal teams: OCO-2, GOSAT, ASTER, HypsIRI/SBG, CAMP2Ex (2009-present).
- Elected member of the Deep Carbon Observatory's DECADE program (since 2013).
- Team co-lead, EOS Volcanic Monitoring Implementation (2009-2012).
- Chair, World Org. of Volcano Observatories, Global Database of Unrest Team (2007-2009).
- Founding member, World Org. of Volcano Observatories, Steering Committee (2007-present).
- Frequent conference & workshop organizer, reviewer, professional mentor.

Selected Active & Past Research Collaborations in Asia-Oceania

Philippines: NIGS & IESM @Univ. of Phil. Diliman (UP); De La Salle Univ.; Energy Development Corp.

Japan: JAXA; NIES; RESTEC; National Research Institute for Earth Science and Disaster Prevention (NIED).

Singapore: Earth Observatory of Singapore; National University of Singapore.

Indonesia: Centre for Volcanology and Geological Hazard Mitigation.

New Zealand: GNS New Zealand.

Thailand: National Astronomical Research Institute of Thailand.

Australia: Univ. of Wollongong.