Jian-Xiong Sheng

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Education

ETH Zurich (Swiss Federal Institute of Technology)	Zurich, Switzerland
Ph.D. in Environmental Science	*2014*

Dissertation: Modeling stratospheric aerosols using a coupled aerosol-chemistry-climate model

University of Paris VI	Paris, France
M.S. in Fluid Mechanics	*2010*

University of Leuven	Leuven, Belgium
B.S. in Mathematics	*2008*

Experience

Harvard University	Cambridge, MA
Postdoctoral Fellow	*2015 -Present*

- Use current atmospheric methane observations from the GOSAT satellite, SEAC^{4}RS aircraft to better quantify methane emissions over North America.
- Assess the potential of future satellite observations from TROPOMI and from geostationary platforms (geoCARB, GEO-CAPE)
- Develop bottom-up methane emission inventories from oil and gas systems.

Laboratory for Mechanics, Modelling and Clean Processes, CNRS	France
Intern, Numerical simulation of vortex wake using the Navier-Stokes penalization method.	*2010*

Solar Influences Data Analysis Center, Royal Observatory of Belgium	Belgium
Intern, Solar image processing and data analysis.	*Summer 2007*

Teaching Experience

ETH Zurich (Swiss Federal Institute of Technology)	Zurich, Switzerland
Teaching Assistant	*2011-2014*

Numerical Modeling of Weather and Climate (3 semesters)
Stratospheric Chemistry (4 semesters)
Atmospheric physics lab work (1 semester)
Numerical Methods in Environmental Physics (1 semester)

Awards and Fellowships

Kravis Fellowship, Environmental Defense Fund, 2015-2017
Swiss National Science Foundation for doctoral students, 2010-2014

Peer-Reviewed Publications

In Preparation

Sheng et al. *Spatially resolving methane emissions in the Southern US: constraints from the SEAC^{4}RS aircraft campaign and from future satellite (TROPOMI, GEO-CAPE, geoCARB) observations*.

Submitted

Sheng J-X, Jacob DJ, Turner AJ, Maasakkers JD, Benmergui J, Bloom AA, Arndt C, Gautam R, Zavala-Areiza D, Boesc H, et al. *2010-2015 methane trends over Canada, the United States, and Mexico observed by the GOSAT satellite: contributions from different source sectors*. Submitted to Environ. Sci. Technol.

2017

Sheng J-X, Jacob DJ, Maasakkers JD, Sulprizio MP, Zavala-Araiza D, Hamburg SP. *A high-resolution (0.1°x0.1°) inventory of methane emissions from Canadian and Mexican oil and gas systems*. Atmospheric Environment. 2017;158 :211–215.

Zhu L, Mickley LJ, Jacob DJ, Marais EA, Sheng J, Hu L, Abad GG, Chance K. *Long-term (2005–2014) trends in formaldehyde (HCHO) columns across North America as seen by the OMI satellite instrument: Evidence of changing emissions of volatile organic compounds*. Geophysical Research Letters. 2017.

2016

Jacob DJ, Turner AJ, Maasakkers JD, Sheng J, Sun K, Liu X, Chance K, Aben I, McKeever J, Frankenberg C. *Satellite observations of atmospheric methane and their value for quantifying methane emissions*. Atmospheric Chemistry and Physics. 2016;16 (22) :14371–14396.

2015

Sheng J-X, Weisenstein DK, Luo B-P, Rozanov E, Stenke A, Anet J, Bingemer H, Peter T. *Global atmospheric sulfur budget under volcanically quiescent conditions: Aerosol-chemistry-climate model predictions and validation*. Journal of Geophysical Research: Atmospheres. 2015;120 (1) :256–276.

Sheng J-X, Weisenstein DK, Luo B-P, Rozanov E, Arfeuille F, Peter T. *A perturbed parameter model ensemble to investigate Mt. Pinatubo's 1991 initial sulfur mass emission*. Atmospheric chemistry and physics. 2015;15 (20) :11501–11512.

2013

Arfeuille F, Luo BP, Heckendorn P, Weisenstein D, Sheng JX, Rozanov E, Schraner M, Brönnimann S, Thomason LW, Peter T. *Modeling the stratospheric warming following the Mt. Pinatubo eruption: uncertainties in aerosol extinctions*. Atmospheric chemistry and physics. 2013;13 (22) :11221–11234.

2012

Sheng JX, Ysasi A, Kolomenskiy D, Kanso E, Nitsche M, Schneider K. *Simulating vortex wakes of flapping plates*. Natural Locomotion in Fluids and on Surfaces. 2012 :255–262.