

# SUSANNA STRADA

Earth System Physics Section  
The Abdus Salam International Centre for Theoretical Physics  
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## EDUCATION

**Ph.D. in Atmospheric Chemistry and Physics**, Université Paul Sabatier  
Dissertation: "Multiscale modelling of wildfires impacts on the atmospheric dynamics and chemistry in the Mediterranean region". Supervisor: Céline MARI. Toulouse, France  
2008–2012

**M.S in Physics**, University of Bologna Bologna, Italy  
2006–2008

**B.A in Physics**, University of Milan Milan, Italy  
2002–2006

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## AWARDS and FELLOWSHIPS

**Marie Skłodowska-Curie Actions** (Individual European Fellowship, 24-month) funded by the European Commission (180,000 euros) 2017

**TALENTS fellowship** (incoming mobility, 18-month) funded by the Friuli Venezia Giulia Region through the European Social Fund (60,000 euros) 2016

**Bourse ATUPS** (3-month fellowship) funded by Université Paul Sabatier (France) to support a scientific visit to Brazil (2,000 euros) 2010

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## RESEARCH EXPERIENCE

**The Abdus Salam International Centre for Theoretical Physics, Earth System Physics** Trieste, Italy  
2017–Present  
TALENTS (18 months) and MSCA-IF (30 months) Post-doctoral Fellow.  
Advisor: Dr. Filippo GIORGI and Josep PENUÉLAS (UAB-CREAF, Barcelona, Spain).

- Investigate relationship between biogenic emissions and soil moisture through regional climate simulations and analysis of multiple observational datasets
- Perform and examine regional climate simulations on the effects of land-use changes on European regional climate

**Institut Pierre et Simon Laplace, Laboratoire des Sciences du Climat et de l'Environnement** Gif-sur-Yvette,  
France  
2015–2017  
Post-doctoral Fellow. Advisor: Dr. Nathalie de NOBLET. Duration: 24 months.

- Quantified the impacts of land-use changes on regional climate over France using a coupled land-atmosphere regional climate model
- Reviewed state-of-the-art studies on physical-chemical-biological processes involved in land-use changes via collaborations with chemists, biologists and land planners (Perrin et al., 2018; Massad et al., 2019)

**Yale University, School of Forestry and Environmental Studies** New Haven (USA)  
2013–2014  
Post-doctoral Fellow. Advisor: Prof. Nadine UNGER. Duration: 18 months.

- Assess impacts of anthropogenic aerosols on global photosynthesis and biogenic emissions using a global Earth System model (Strada and Unger, 2016)
- Detect the regional effects of air pollution on plant health using satellite aerosol data and in-situ observations (Strada et al., 2015; Yue et al., 2017)

#### Université Paul Sabatier, Laboratoire d'Aérodynamique

Toulouse, France

Post-doctoral Fellow. Advisor: Dr. Céline MARI. Duration: 11 months.

2012

- Compare two coupled fire-atmosphere models and their representations of the Lisbon 2003 wildfires
- Adapt and implement a regional inventory of anthropogenic emissions in a numerical fire-atmosphere model

#### National Institute for Space Research, Centre for Weather Forecasting and Climate

São José dos Campos, Brazil

Visiting scientist. Advisors: Dr. Karla LONGO and Dr. Saulo FREITAS. Duration: 4 months.

2010

- Compare two numerical approaches to reproduce the injection height of wildfires

#### TEACHING, SUPERVISING and MENTORING EXPERIENCE

- **Lecturer**, Volume: 40h. Univ. Trieste and ICTP-ESP Diploma (Trieste, Italy), **2018–2019**
- **Co-supervised** 2 Master students, 1 Bachelor student and 1 visiting scientists, **2010–Present**
- **Mentor** of women PhDs at “Women In Science At Yale”, Yale University (New Haven, USA), **2013–2014**
- **Teaching assistant**, Volume: 64h per year, Univ. Paul Sabatier (Toulouse, France), **2008–2011**

#### PUBLICATIONS and COMMUNICATIONS

##### International peer-reviewed papers

1. Massad, R. S., Lathière, J., **Strada, S.**, Perrin, M., Personne, E., Stéfanon, M., Stella, P., Szopa, S., and de Noblet-Ducoudré, N., “Reviews and syntheses: Influences of landscape structure and land uses on local to regional climate and air quality”. *Biogeosciences*, **2019**.
2. Perrin, M., de Noblet-Ducoudré, N., **Strada, S.**, and A. Torre, A., “Extension of the scope of climate action: the way spatial planners could take advantage of developments in regional climatology”. *NOROIS*, **2018** (in French).
3. Yue, X., **Strada, S.**, and Unger, N., “Future inhibition of ecosystem productivity by increasing wildfire pollution over boreal North America”, *Atmospheric Chemistry and Physics*, **2017**.
4. **Strada, S.** and Unger, N., “Potential sensitivity of photosynthesis and isoprene emission to direct radiative effects of atmospheric aerosol pollution”, *Atmospheric Chemistry and Physics*, **2016**.
5. **Strada, S.**, Unger, N., and Yue, X., “Observed aerosol-induced radiative effect on plant productivity in the eastern United States”, *Atmospheric Environment*, **2015**.
6. **Strada, S.**, Mari, C., Filippi, J. B., and Bosseur, F., “Wildfire and the atmosphere: modelling the chemical and dynamic interactions at the regional scale”, *Atmospheric Environment*, **2012**.
7. Filippi, J. B., Bosseur, F., Pialat, X., Santoni, P.-A., **Strada, S.**, and Mari, C., “Simulation of coupled fire/atmosphere interaction with the MesoNH-ForeFire models”, *Journal of Combustion*, **2011**.
8. Pagnini, G., **Strada, S.**, Maurizi, A., and Tampieri, F., “Lagrangian stochastic modelling for oil spills turbulent dispersion on ocean surface”. *Communications in Applied and Industrial Mathematics*, **2010**.

##### Submitted papers

- Davin E., Rechid, D., Breil, M., Cardoso, R. M., Coppola, E., Hoffmann, P., Jach, L. L., Katragkou, E., de Noblet-Ducoudré, N., Radtke, K., Raffa, M., Soares, P. M. M., Sofiadis, G., **Strada, S.**, et al., “Biogeophysical impacts of forestation in Europe: First results from the LUCAS Regional Climate Model intercomparison”. Under review in Earth System Dynamics. Available in ESD Discussion.
- Breil, M., Rechid, D., Davin, E.L., de Noblet-Ducoudré, N., Katragkou, E., Cardoso, R. M., Hoffmann, P., Jach, L. L., Soares, P.M.M., Sofiadis, G., **Strada, S.**, et al., “The opposing effects of afforestation on the diurnal temperature cycle at the surface and in the atmospheric surface layer in the European summer”. Submitted to Climate Dynamics.

#### International communications at conferences (selected)

Communications selected from 19 presentations, of which 13 as first author.

1. **Strada, S.**, and Coppola, E., “Impacts of maximum deforestation/reforestation on regional climate over Europe”, poster presentation, EGU General Assembly, **2018**, Vienna, Austria.
2. **Strada, S.**, de Noblet-Ducoudré, Stefanon, M., and Perrin, M., “What is the sensitivity of regional climate modeling to land use and land cover changes?”, **oral presentation**, Global Land Project 3<sup>rd</sup> Open Science Meeting, **2016**, Beijing, China.
3. **Strada, S.**, and Unger, N., “Do anthropogenic aerosols enhance CO<sub>2</sub> uptake by plants?”, **oral presentation**, AGU Fall Meeting, **2013**, San Francisco (CA), USA.
4. **Strada, S.**, Freitas, S. R., Mari, C., Longo, K. M., “How high can a smoke plume rise in MesoNH?”, **oral presentation**, 6<sup>th</sup> Meso-NH User's Meeting, **2011**, Toulouse, France.
5. **Strada, S.**, Mari, C., Filippi, J. B., and Bosseur, F., “Forest Fire Impact on Air Quality: the Lancon-de-Provence 2005 Case”, poster presentation, 11<sup>th</sup> IGAC Conference, **2010**, Halifax, Canada.
6. **Strada, S.**, Mari, C., Filippi, J. B., and Bosseur, F., “Forest Fire Impact on Air Quality: the Lancon-de-Provence 2005 Case”, **oral presentation**, 8<sup>th</sup> Symposium on Forest Fires and Meteorology (AMS), **2009**, Kalispell (MT), USA.

#### **ADDITIONAL INFORMATION**

##### **Scientific expert and reviewer for:**

Atmospheric Environment (3), Nature Geoscience (3), Atmosphere (1), Agricultural and Forest Meteorology (1), Scientific Reports (1), Atmospheric Chemistry and Physics (1), Hydrology and Earth System Sciences (1).

##### **Professional membership:**

Earth Science Women’s Network, Young Earth System Scientists Community.