

## PERSONAL INFORMATION

## Simone Sabbatini



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## WORK EXPERIENCE

01/07/2021–today

**Junior Researcher**

Foundation CMCC – Euromediterranean Center on Climate Change  
Via Augusto Imperatore 16 73100 Lecce (Italy)

I am currently employed at the CMCC Foundation, and I am involved in the ICOS Ecosystem Thematic Center (ETC) activities, where I am dealing with several aspects. In particular, I am the reference person for ICOS Ecosystem stations on what concerns eddy covariance (EC) and air meteorological measurements, as well as on everything linked to the proper raw data files construction: I am in charge of giving support to the station teams on those matters from their application to become ICOS stations to the implementation time (labelling period) and also afterwards, during the normal operativity of the stations. Also, I am in charge of performing quality routines on EC data developed by my colleagues at the ETC for the final approval (or rejection) during the labelling time, running at the Department high performance computer (HPC); and of ensuring that the automatic files transfer from the stations to the ICOS server is working well. During the twice-per-year centralised data processing, I am in charge of caring the correct meteorological metadata ingestion of meteorological sensors by the processing routines. I check the compliance of the air meteo sensors for ICOS purposes. In addition to the activities of ICOS, I am also the supervisor of two PhD students at the DIBAF – University of Tuscia: the first one performed an analysis on the impact of the standardisation of the EC measurements in monitoring networks like ICOS, and she submitted the final thesis on September 2021. The second one is performing a Carbon balance analysis based on eddy covariance measurements of an organic winter wheat cultivation compared to a traditional one: as a supervisor, I am following her activities from the installation of the EC masts to the data processing and analysis, providing support and guidance.

**Business or sector** Agriculture, forestry and fishing

01/05/2014–30/04/2021

**Fellow researcher**

DIBAF - University of Tuscia  
Via S Camillo de Lellis s.n.c, 01100 Viterbo (Italy)

Post-doctoral position at the Department for Innovation in Biological, Agro-food and Forest systems (DIBAF) at the University of Tuscia in Viterbo (Italy), sector of Forest Ecology. In particular, I dealt with emissions of greenhouse gases (GHGs), responsible for the global warming affecting earth climate on a global scale.

In this period I have been part of a European research infrastructure (ICOS - Integrated Carbon Observation System), aiming at quantifying the GHG balance of the European Continent. In particular, I have been participating at the activities of the ICOS facility Ecosystem Thematic Center (ETC), responsible among other to give methodological support to the high-standard monitoring stations of ICOS.

A part of the post-doc involved designing and performing an experiment aiming at quantifying the uncertainties in the eddy covariance method (EC) for measuring GHGs at the ecosystem scale. Based on the preliminary results, I was involved in the definition of the ICOS data processing protocol, and then on the publication of a manuscript on an international scientific journal. Another crucial task I was designated was to provide support to the ICOS ecosystem stations candidate to become official ICOS stations during the two phases of the so-called "Labelling" procedure, especially for what concerned eddy covariance measurements, some meteorological measurements and the flow of the

files from the station to the ICOS server. At the same time, our team was in charge of defining and implementing the complex routine for the automatic data processing, a fundamental task of the ETC: in this framework, I have been supporting my colleagues in the definition and check of the procedures needed, and in the correct interpretation of metadata. Other tasks at the ETC involved the inter-comparison of performances of high-precision devices (sonic anemometers and gas analysers), writing five official Instructions documents, caring the implementation of preliminary file format checks and performing synchronisation tests of EC data, when needed, and running one of the initial quality tests for each ICOS station.

During the post-doc period I was also the co-author in a scientific paper on the synchronization of EC timeseries, and in another one for the GHG balance of a vineyard.

Finally, I have been in charge of supervising the work of two PhD students from Pakistan, one dealing with emissions of GHGs in rice cultivation, the second analysing the uncertainties related to the standardisation of EC methodology.

**Business or sector** Agriculture, forestry and fishing

22/07/2015–30/07/2015

### Teaching

University Studies Abroad Consortium - USAC  
via Santa Maria in Gradi, 4 – 01100 Viterbo

I made a short period of teaching at the USAC (University Studies Abroad Consortium), where I had the course "Exploration of the Mediterranean and Italian coastline" for a total of 10 hours. The course focused on the ecological peculiarities of the coastlines, in particular in the Mediterranean context, and it was addressed to American students.

**Business or sector** Agriculture, forestry and fishing

01/03/2011–28/02/2014

### Doctorate degree

DIBAF - University of Tuscia  
Via S. Camillo de Lellis s.n.c., 01100 Viterbo (Italy)

Doctorate course at the DIBAF, University of Tuscia, Viterbo, in the sector of Forest Ecology. The doctorate thesis focussed on the suitability of a land use change from traditional agriculture to short rotation coppice of hybrid poplar for biomass production from a greenhouse gas (GHG) perspective. An experiment based on the "eddy covariance" technique, used to calculate fluxes of CO<sub>2</sub> and energy at the border ecosystem/atmosphere, was setup in a local farm, where GHG budgets were calculated and compared between the two different ecosystems of interest.

**Business or sector** Agriculture, forestry and fishing

07/01/2010–16/04/2010

### Photointerpretation

R.D.M. Progetti s.r.l.  
Via Maragliano, 31, 50144 Florence (Italy)

Photointerpretation of aerial photos in several provinces of Italy in terms of land use and land use changes during time

**Business or sector** Agriculture, forestry and fishing

07/09/2009–16/10/2009

### Internship

R.D.M. Progetti s.r.l., Florence (Italy)

23/07/2007–06/09/2007

### Internship

Comunità Montana del Cetona, Sarteano (SI) (Italy)

## EDUCATION AND TRAINING

04/03/2013–07/06/2013

DIBAF - University of Tuscia, Viterbo (Italy)

Remote Sensing and Forest modelling

04/11/2011–17/02/2012

**Certificate of idoneity**

DIBAF - University of Tuscia, Viterbo (Italy)

Statistics course for PhD students

11/09/2011–20/09/2011

**Attendance certificate**

Poznań university of Life Science, Poznań (Poland)

*Flux measurement techniques: methods, sensors, databases and modelling (summer school)*

22/11/2010–09/12/2010

**Certificate of attendance**

Live Language – school of English, Glasgow (Scotland)

*English course – liv. Upper-Intermediate*

13/07/2010–13/07/2010

**Professional practice exam**

Agriculture faculty - University of Florence, Florence (Italy)

01/09/2007–16/04/2010

**Master's degree in Management of Forestry Systems**

Faculty of Agriculture - University of Florence, Florence (Italy)

Degree received on April 16<sup>th</sup>, 2010 with a score of 110/110 *cum laude*.

Title of Thesis: "Relict Beech Forests in the southern Tuscany: contribution to the knowledge of synecology, syntaxonomy, structure and floristic diversity".

01/09/2004–12/04/2008

**Bachelor's Degree in Forestry and Environmental Science**

Faculty of Agriculture - University of Florence, Florence (Italy)

Degree received on March 12<sup>th</sup>, 2008 with a score of 110/110.Title of thesis: "**The conversion of Oak coppices: the case of the forest of "Palazzone" (Chianciano Terme, SI)**"

15/09/1995–10/06/2000

**Highschool Diploma**

High School "A. da Sangallo", Montepulciano (SI) (Italy)

Diploma received with a score of 100/100

## PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	B2	B1	B2	B2
French	B1	B2	B1	B1	B1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user  
Common European Framework of Reference for Languages

Communication skills

Good communication skills gained during the occupation as a post-doc. Good collaboration attitude gained through the PhD course, also with foreign colleagues due to several experiences (conferences, courses, missions) conducted abroad. Good supportive approach towards students learned during the tutorship to PhD students

Organisational / managerial skills

Good organisational skills gained during the PhD and the post-doc, in particular due to the need for coordination with colleagues and technicians

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Independent user	Proficient user	Independent user

Digital competences - Self-assessment grid

Good knowledge of software Matlab (file management, data-analysis, statistical analysis of timeseries). Good experience with the software LICOR – EddyPro® for the elaboration of eddy covariance raw data. Basic knowledge of Cluster HPC technology and basic Unix commands. Good knowledge of statistics software Minitab and of the main Operative Systems Microsoft (from Windows 98 to Windows 10), of the main programmes Microsoft Office (da MO 97 a MO 365), of Open Source Office Suite (OpenOffice), of the main browsers (Internet Explorer, Firefox Mozilla, Google Chrome), and of GIS software (ArcView). Base knowledge of software Autocad.

Driving licence B

## ADDITIONAL INFORMATION

Conferences

JRU ICOS Italia meeting, virtual conference, 15/04/2021.  
 JRU ICOS Italia meeting, virtual conference, 02/04/2020.  
 RINGO annual meeting, Poznan, 02-04/03/2020.  
 AmeriFlux Annual Meeting, Boulder (CO), 17-19/09/2019. Oral presentation on standardisation of Eddy Covariance setup and processing.  
 RINGO annual meeting, Southampton, 18-22/03/2019.  
 AGU (American Geoscience Union), Washington, 10-14/12/2018 (oral presentation)  
 ICOS Monitoring Stations Assembly, Rome, 16-18/04/2018.  
 RINGO annual meeting, Antwerp, 20-22/03/2018.

## Curriculum vitae

EGU (European Geoscience Union) 2017, Vienna, 23-27/04/2017. Oral presentation on the uncertainty of eddy covariance raw data processing.

ICOS Monitoring Stations Assembly, Hyytiälä, 4-7/04/2016.

Data meeting for flux networks at LICOR, Lincoln, (NE), 11-20/02/2016.

ICOS Carbon Portal Data service workshop, Lund, 1-2/02/2016.

ICOS ETC-PIs meeting, Todi, 23-27/11/2015.

ICOS Monitoring Stations Assembly, Brno, 14-16/09/2015.

ICOS Italia meeting, Rome, 30/06-01/07/2015.

ICOS MSA meeting, Zurich, 03-05/02/2015.

ICOS Ecosystem Working Groups meeting, Villenave d'Ornon, 25-27/03/2014.

AmeriFlux Data Manager's Workshop, Berkeley (CA), 12-13/02/2014. Oral presentation

Greenhouse Gas Management in European Land Use Systems, Antwerp, 16-18/09/2013. Poster

Global Change and Resilience conference, CzechGlobe, Brno, 22-24/05/2013. Poster

EGU (European Geoscience Union) 2013, Vienna, 07-12/04/2013. Poster

EGU (European Geoscience Union) 2012, Vienna, 22-27/04/2012. Poster

GHG-Europe Annual Meeting 2012, Pitesti, 17-20/04/2012. Poster

## Publications

Sabbatini et al., 2018. EDDY COVARIANCE RAW DATA PROCESSING FOR CO<sub>2</sub> AND ENERGY FLUXES CALCULATION AT ICOS ECOSYSTEM STATIONS. *International Agrophysics*, 32/4, 495-515, 10.1515/intag-2017-0043.

Sabbatini et al., 2016. GREENHOUSE GAS BALANCE OF CROPLAND CONVERSION TO BIOENERGY POPLAR SHORT ROTATION COPPICE. *Biogeosciences*, 13, 95–113, 2016. [www.biogeosciences.net/13/95/2016/](http://www.biogeosciences.net/13/95/2016/) doi:10.5194/bg-13-95-2016.

Sabbatini et al., 2013. FARM-GATE BUDGET OF ENERGY CROPS: GREEN HOUSE GAS BALANCE IN A LAND USE CHANGE FROM GRASSLAND TO SHORT ROTATION COPPICE OF POPLAR. *Global Changes and Resilience. From Impacts to Responses*. pp. 268-276. Global Change Research Centre AS CR, v.v.i.

Sabbatini et al., 2011. LE FAGGETE EXTRAZONALI DELL'ANTI-APPENNINO TIRRENICO TOSCANO: ASPETTI STRUTTURALI, DIVERSITÀ E CARATTERISTICHE SINECOLOGICHE. *Forest@-Journal of Silviculture & Forest Ecology*, 8(4).

Pastorello et al., 2020. The FLUXNET2015 dataset and the ONEFlux processing pipeline for eddy covariance data. *Sci Data* 7, 225. <https://doi.org/10.1038/s41597-020-0534-3>

Vitale et al., 2020. A ROBUST DATA CLEANING PROCEDURE FOR EDDY COVARIANCE FLUX MEASUREMENTS. *Biogeosciences*, 17, 1367–1391, 2020. <https://doi.org/10.5194/bg-17-1367-2020>

Shang et al., 2019. WEAKENED GROWTH OF CROPLAND N<sub>2</sub>O EMISSIONS IN CHINA ASSOCIATED WITH NATIONWIDE POLICY INTERVENTIONS. *Global change biology*, 2019, 25: 3706– 3719. <https://doi.org/10.1111/gcb.14741>

Chiriaco et al., 2019. THE POTENTIAL CARBON NEUTRALITY OF SUSTAINABLE VITICULTURE SHOWED THROUGH A COMPREHENSIVE ASSESSMENT OF THE GREENHOUSE GAS (GHG) BUDGET OF WINE PRODUCTION. *Journal of Cleaner Production*, 225, 435-450, <https://doi.org/10.1016/j.jclepro.2019.03.192>.

Fratini et al., 2018. EDDY COVARIANCE FLUX ERRORS DUE TO RANDOM AND SYSTEMATIC TIMING ERRORS DURING DATA ACQUISITION. *Biogeosciences Discussions*.

Van Asperen et al., 2016. DIEL VARIATION IN ISOTOPIC COMPOSITION OF SOIL RESPIRATORY CO<sub>2</sub> FLUXES: THE ROLE OF NON-STEADY STATE CONDITIONS. *Agricultural and Forest Meteorology*, 234:95-105.