DICHIARAZIONI RESE AI SENSI DEGLI ARTT. 46 E 47 DEL D.P.R. 28 DICEMBRE 2000, N. 445 E S.M.I.

PERSONAL INFORMATION

First name Surname **Graziosi Francesco**

WORK EXPERIENCE

2021-CURRENT

Laboratory of the Sciences for the Climate and the Environment (LSCE). France, Paris.

- Dates
- Name of employer

- Occupation or position held: Research contract. Project title: "Assimilation of space-borne concentration observations for the monitoring of CO2 and CH4 emissions ".
- Main activities and responsibilities: We study new concepts of space-borne concentration observations for the monitoring of hotspots of CO_2 and CH_4 emissions. I am in charge of applying and developing the TRACE high resolution atmospheric inverse modeling system assimilating column CO_2 and CH_4 satellite data to monitor emissions at the scale of populated regions, large cities and large point sources for studying the potential of new concepts of space-borne observation for reducing uncertainties in emissions, and to data from current satellite missions observing CO_2 and CH_4.

- Dates: **2019-2020**
- Name of employer: University of Urbino Carlo Bo. Department of Pure and Applied Sciences DiSPeA
- Occupation or position held: Research contract. Project title: "Inverse modelling of greenhouse gas fluxes from atmospheric observations".
- Main activities and responsibilities: The project aims to estimate the national (Italian) and regional (European) CH_4 and CO_2 fluxes through inversion modelling, to check the consistency with bottom up inventory. The Lagrangian dispersion model (FLEXPART) driven with high-resolution nested wind fields' (ECMWF

European Center of Weather Forecast) is used to simulate the backward transport of particles released from monitoring sites. High frequency in situ monitoring observations, together with satellite data, are applied on inversion model cascades. FLEXINVERT+ framework is used to optimize the surface-atmospheric fluxes of both species. I am in charge of the complete model chain system.

• Dates	**2018-2019**
• Name of employer	Institute of Atmospheric Sciences and Climate - National Research Council (ISAC-CNR).
• Occupation or position held	Research contract. Project title: "Atmospheric transport evaluation of atmospheric composition, a model chain at mesoscale and local scale, and inversion techniques".
• Main activities and responsibilities	The main research lies in source characterization of gases and aerosols monitored at high-troposphere and low-stratosphere during the Asian summer monsoon over an airplane campaign. For this, I use a combination of atmospheric measurements and models of atmospheric transport with statistical optimization techniques to determine the best estimates of the sources/sinks of different atmospheric species. The atmospheric transport and dispersion simulations on local scale are driven by meteorological model WRF (Weather Research and Forecasting) coupled with Lagrangian dispersion model FLEXPART-WRF, while the regional and global transport and dispersion process are simulated with FLEXPART model driven with ECMWF (European Center of Weather Forecast) meteorological data.
• Dates	**2011-2018**
• Name of employer	University of Urbino Carlo Bo. Department of Science and Fundamentals :Mathematics, Informatics, Physics, Chemistry, Epistemology and history of science
• Occupation or position held	Research fellow. Project title: "Estimating greenhouse gasses emissions using observations and modeling back-attribution techniques".
• Main activities and responsibilities	The key activities concerned in determining the source magnitude and understanding the source processes of greenhouse gases (GHGs) and other climate-related atmospheric species, in particular, halocarbons, VOCs (Volatile organic compounds) and aerosol species as black carbon. For this purpose, I use a combination of a Lagrangian atmospheric transport model (FLEXPART) with atmospheric concentration measurements, in conjunction with a Bayesian inversion statistical optimization technique. Moreover, I am trying to improve the understanding of anthropogenic emissions and natural sources (and sinks) and the influence of environmental factors on these. The research results have been published on national and international Journals, please refer to the following list.
• Dates	**2010- 2011**
• Name of employer	University of Urbino Carlo Bo.

	Department of Mathematics Physics and Informatics
• Occupation or position held	Research fellow. Project title: “Statistical data analysis of atmospheric compounds monitored at CNR-ISAC Monte Cimone station and at EVR-K2; emission sources allocation through meteorological model in conjunction with dispersion model (FLEXPART) and back attribution techniques.”
• Main activities and responsibilities	The main study concerned in a statistical data analysis of different atmospheric species monitored at “O. Vittori” station at Monte Cimone and monitored flask sampled over EVR-K2 station over Himalaya (K2 mountain). With the aim to investigate the main emission sources over the study domain a FLEXPART model simulation and back-attribution techniques were applied.
• Dates	**2009**
• Name of employer	University of Urbino Carlo Bo. Faculty of Science and Technology, Institute of Chemistry Science
• Occupation or position held	Research contract. Project title: “An European network of Hydrogen observations and studies”.
• Main activities and responsibilities	I was in charge of systematic quality daily data control of gas-chromatography multi detection (GC-MD) instrument and custom made gas-chromatograph equipped with an RGD detector – Trace Analytical RGA-2 at the Italian Climate Observatory “O. Vittori” (ICO-OV) on Monte Cimone. Detector and system reproducibility were continuously evaluated by the good practice of bracketing measurements of real samples with working standard analysis. All measures to rectify faults and maintain the devices were documented in a database. This ensures that current and future users are informed of any events that have occurred. In particular, this was of great significance for the homogenization of climate data. Moreover, an important task was to repair and maintain the instruments.

SUPPLEMENTARY WORK EXPERIENCE

• Dates	**December 2014-March 2015**
• Name of employer	University of Urbino Carlo Bo. Department of Science and Fundamentals : Mathematics, Informatics, Physics, Chemistry, Epistemology and history of science
• Occupation or position held	Research contract. Project title: “Numerical simulation of air quality data within the project named VIIAS”.
• Main activities and responsibilities	The main research was related to a statistical data analysis of air quality data monitored within the VIIAS project (Integrated evaluation of the environmental and health impact of atmospheric pollution), financed by Italian Ministry for Health.

• Dates	**2011-2013**
• Name of employer	Province of Pesaro Urbino
• Occupation or position held	Research contract. Project title: “Meteorological characterization for risk assessment evaluation“. “Atmospheric pollution and climate change” “Nitrogen footprint: Agriculture, Feed, Transport and Energy”.
• Main activities and responsibilities	I was in charge of an educational project for high school students. The subjects that have been addressed are regarding meteorology, air quality, climate change and nitrogen footprint.

EDUCATION AND TRAINING

• Dates (from – to)	**2009-2013**
• Name and type of organization providing education and training	**PhD on Environmental Science (Atmospheric)** at the department of Land Life and Environmental Science. University of Urbino Carlo Bo.
• Principal subjects/occupational skills covered	Final thesis title: “A Bayesian inversion technique for estimating European emissions of Methyl Chloroform”. Supervisor Prof. Umberto Giostra umberto.giostra@uniurb.it. The results obtained on the final thesis have been published on the international Journal “Atmospheric Chemistry and Physics”, with the title “Estimates of European emissions of methyl chloroform using a Bayesian inversion method”, Atmos. Chem. Phys., 14, 9755-9770, doi:10.5194/acp-14-9755-2014, 2014. During the last year of the PhD course, I was guest on NILU (Norwegian Institute for Air Research), where I improved greatly my knowledge of FLEXPART (Lagragian particle dispersion model) model simulations, in conjunction with a Bayesian inversion technique for the purpose of determining the global and regional emissions of polluted gases. The main activities during the PhD course were focused on the emission sources determination and improving the understanding of the source process of climate-related atmospheric species. For this purpose, I used a combination of atmospheric concentration measurements and models of atmospheric transport. I also used statistical optimization techniques, especially Bayesian inversion, to determine the best estimates of the sources of different atmospheric species.
• Title of qualification awarded	PhD in Environmental Science (Atmospheric)
• Dates (from – to)	**2009**
• Name and type of organization providing education and training	**Master Degree in Environmental Science (Atmosphere),** Faculty of Sciences and Technologies. University of Urbino Carlo Bo.
• Principal subjects/occupational skills covered	Final thesis title : “Concentration data analysis of atmospheric hydrogen measured at the Italian Climate Observatory “ Ottavio Vittori” at Monte Cimone for estimating source emissions on regional scale”

Tutor Prof.ssa Michela Maione michela.maione@uniurb.it
The master degree course of Environmental Science focuses on investigating the complexity of Earth systems. An increasingly important aspect of environmental science is the understanding of past and present climate systems through integrated studies of the interactions between the lithosphere, oceans, atmosphere and biosphere. Many other pressing environmental issues such as the supply of water and natural hazards are tightly related to the earth sciences. The last two years of specialization were focused on the atmospheric system.
During the final thesis project, I was in charge for systematic quality daily data control of gas-chromatography multi detection (GC-MD) instrument and custom made gas-chromatograph equipped with an RGD detector – Trace Analytical RGA-2 in Monte Cimone "O. Vittori" station; together with a statistical data analysis of concentration time series and meteorological parameters.

• Title of qualification awarded

Master degree in Environmental Science (Atmospheric)

PERSONAL SKILLS AND COMPETENCES

PERSONAL H-INDEX (SCOPUS)

6

PUBLISHED REPORTS

SPARC (2016), **SPARC Report on the Mystery of Carbon Tetrachloride**. Q. Liang, P.A. Newman, S. Reimann (Eds.), SPARC Report No. 7, WCRP-13/2016.

SCIENTIFIC PAPERS
(THE I.F. VALUES AND THE NUMBER OF CITATIONS ARE BASED ON SCOPUS)

2020
1-Cristofanelli, P, Fierli, **F, Graziosi**, F, Steinbacher, M, Couret, C, Calzolari, F, Roccato, F, Landi, T, Putero, D, Bonasoni, P. 2020. Decadal O_3 variability at the Mt. Cimone WMO/GAW global station (2,165 m a.s.l., Italy) and comparison with two high-mountain "reference" sites in Europe. *Elem Sci Anth*, 8: 1. DOI: https://doi.org/10.1525/elementa.00042
Cite Score (2020) : 8.5
e-ISSN : 2325-1026
Number of Citations : 1

2020
2-Simmonds, P. G., Rigby, M., Manning, A. J., Park, S., Stanley, K.M., McCulloch, A., Henne, S., **Graziosi, F**., Maione, M., Arduini, J., Reimann, S., Vollmer, M. K., Mühle, J., O'Doherty, S., Young, D., Krummel, P. B., Fraser, P. J., Weiss, R. F., Salameh, P. K., Harth, C. M., Park, M.-K., Park, H., Arnold, T., Rennick, C., Steele, L. P., Mitrevski, B., Wang, R. H. J., and Prinn, R. G.: "*The increasing atmospheric burden of the greenhouse gas sulfur hexafluoride (SF_6)*", Atmos. Chem. Phys., 20, 7271–7290, https://doi.org/10.5194/acp-20-7271-2020, 2020.
Year : 2020
Journal : Atmospheric Chemistry and Physics

Cite Score (2020) : 10.1
ISSN : 1680-7316
e-ISSN : 1680-7324
Number of Citations : 5
2017
3 - F. Graziosi, J. Arduini, F. Furlani, U. Giostra, P. Cristofanelli, X. Fang, O. Hermanssen, C. Lunder, G. Maenhout, S. O'Doherty, S. Reimann, N. Schmidbauer, M.K. Vollmer, D. Young and M. Maione "*European emissions of the powerful greenhouse gases hydrofluorocarbons inferred from atmospheric measurements and their comparison with annual national reports to UNFCCC*." Atmospheric Environment (158), 2017 85-97 doi 10.1016/j.atmosenv.2017.03.029.
Year : 2017
Journal : Atmospheric Environment
Cite Score (2017): 4.12
ISSN:1352-2310
eISSN: 1873-2844
Number of Citations : 12

2016
4- F. Graziosi, J. Arduini, P. Bonasoni, F. Furlani, U. Giostra, A. J. Manning, A. McCulloch, S. O'Doherty, P. G. Simmonds, S. Reimann, M. K. Vollmer and M. Maione "*Emissions of Carbon Tetrachloride (CCl_4) from Europe*", Atmos. Chem. Phys doi:10.5194/acp-2016-326, doi:10.5194/acp-16-12849-2016.
Year: 2016
Journal: Atmospheric Chemistry and Physics
Cite Score (2017): 5.44
ISSN:1680-7316
eISSN: 1680-7324
Number of Citations: 8

5- E. Lo Vullo, F. Furlani, J. Arduini, U. Giostra, **F. Graziosi**, P.Cristofanelli, M. L. Williams, M.Maione "*Anthropogenic non-methane volatile hydrocarbons at Mt. Cimone (2165 m a.s.l., Italy): Impact of sources and transport on atmospheric composition*" Atmospheric Environment, 140, 395–403, doi:10.1016/j.atmosenv.2016.05.060, 2016.
Year : 2016
Journal : Atmospheric Environment
Cite Score (2017): 4.12
SSN:1352-2310
eISSN: 1873-2844
Number of Citations : 5

2015
6- F. Graziosi, J. Arduini, F. Furlani, U. Giostra, S. Montzka, S. O'Doherthy, A. Stohl, P. Bonasoni and M. Maione. Atmos. Chem. Phys., "*European emissions of HCFC-22 based on 11 years of high frequency atmospheric measurements and a Bayesian inversion method"*. Atmospheric Environment 112 (2015) 196-207, doi:10.1016/j.atmosenv.2015.04.042.
Year : 2015
Journal : Atmospheric Chemistry and Physics

Cite Score (2017): 5.44
ISSN:1680-7316
eISSN: 1680-7324
Number of Citations: 20

2014
7- Maione, M., **Graziosi**, F., Arduini, J., Furlani, F., Giostra, U., Blake, D. R., Bonasoni, P., Fang, X., Montzka, S. A., O'Doherty, S. J., Reimann, S., Stohl, A., and Vollmer, M. K.: "*Estimates of European emissions of methyl chloroform using a Bayesian inversion method*", Atmos. Chem. Phys., 14, 9755-9770, doi:10.5194/acp-14-9755-2014, 2014.
Year : 2014
Journal : Atmospheric Chemistry and Physics
Cite Score (2017): 5.44
ISSN:1680-7316
eISSN: 1680-7324
Number of Citations: 19

8- X. Fang**,** R. L. Thompson, T. Saito, Y. Yokouchi, J. Kim, S. Li, K. R. Kim, S. Park, **F. Graziosi**, A. Stohl (ACP) *"Sulfur hexafluoride (SF6) emissions in East Asia determined by inverse modeling"* . Atmos. Chem. Phys., 14, 4779-4791, doi:10.5194/acp-14-4779-2014,2014.
Year : 2014
Journal : Atmospheric Chemistry and Physics
Cite Score (2017): 5.44
ISSN:1680-7316
eISSN: 1680-7324
Number of Citations: 13

2013
9- M. Maione, U. Giostra, J. Arduini, F. Furlani, **F. Graziosi**, E. Lovullo, and P. Bonasoni *"Ten years of continuous observations of stratospheric ozone gases at Monte Cimone (Italy)-Comments on the effectiveness of the Montreal protocol from a regional perspective"***.** Sci. Total Environ., 445–446, 155–164, 2013. doi:10.1016/j.scitotenv.2012.12.056.
Year : Febbraio 15 2013
Journal : Science of the total Environment
Cite Score (2017): 4.98
ISSN:0048-9697
eISSN: 1879-1026
Number of Citations: 30

MAIN POSTERS AND ORAL PRESENTATIONS

F. Graziosi G. Broquet, P. Kumar, P. Ciais, D. Simeoni "Academic tests of atmospheric inversion to assess the optimal auxiliary CO2M Instrument (ACI) operating point". COMEX meeting. 22 July 2021

F. Graziosi "Open fires influence to CO_2 observations on March 2020". Oral presentations. ICOS-"Winter 2019-2020 Anomaly" study group meeting 2nd October 2020

F.Graziosi "Top-down European emissions of climate altering compound and comparison with emission inventory reports". Seminar.

Dipartimento di Scienze Fisiche e Chimiche - CETEMPS Universita' degli Studi dell'Aquila. L'Aquila, Italy February 2020.

F.Graziosi "Top-down European emissions of climate altering compound and comparison with emission inventory reports". Seminar. Institute of Atmospheric Sciences and Climate - National Research Council (ISAC-CNR). Torino, Italy February 2020.

M. Maione, **F. Graziosi**, J. Arduini, F. Furlani, U. Giostra, P. Cristofanelli and the AGAGE team "Top-down European emissions of hydrofluorocarbons and comparison with annual national reports to UNFCCC" Poster, 1st IG3IS Symposium, WMO (World Meteorological Organisation), Geneva, Switzerland November 2018

M. Maione, **F. Graziosi**, J. Arduini, U. Giostra, S. Reimann, M. Vollmer. S. O'Doherty, D. Young, K. "Are European countries under reporting emissions of the powerful greenhouse gas HFC-23?"
Oral Presentation, SISC 2018 (Italian Society for Climate Sciences), Venice, October 2018

F. Fierli, C. Cagnazzo, M. Dameris, F Cairo, **F. Graziosi**, F. D'Amato and S. Viciani. Are CCMIs reproducing the main features of the Asian Anticyclone? What we can learn from the StratoClim 2017 campaign. Poster Mainza, February 2018

M. Maione, **F. Graziosi**, J. Arduini, F. Furlani, U. Giostra, P. Cristofanelli, X. Fang, O. Hermanssen, C. Lunder, G. Maenhout, S. O'Doherty, S. Reimann, N. Schmidbauer, M.K. Vollmer, D. Young. "Atmospheric Monitoring and Inverse Modelling for Verification of Halogenated Greenhouse Gas Inventories". Oral Presentation, SISC 2017, Bologna, Italy, October 2017

M. Maione, **F. Graziosi**, J. Arduini, F. Furlani, U. Giostra, P. Cristofanelli and the AGAGE team "Measurements and inverse modelling of halocarbon emissions". Presentazione orale, Workshop Atmospheric monitoring and inverse modelling for verification of GHG inventories" EC-JRC, Ispra, June 2017

M. Maione, **F. Graziosi**, J. Arduini, F. Furlani, U. Giostra, P. Cristofanelli, X. Fang, O. Hermanssen, C. Lunder, G. Maenhout, S. O'Doherty, S. Reimann, N. Schmidbauer, M.K. Vollmer, D. Young. Oral presentation, "European emissions of the powerful greenhouse gases hydrofluorocarbons inferred from atmospheric measurements and their comparison with annual national reports to UNFCCC", NOAA ESRL Global Monitoring Annual Conference, Boulder, Colorado, USA, May 2017

M. Maione, **F. Graziosi**, J. Arduini, F. Furlani, U. Giostra, P. Cristofanelli "Non-methane volatile organic compounds in the background atmospheres of the WMO-GAW Station of Mt. Cimone (Italy)", Presentazione orale, 6th WMO-GAW Expert Workshop on VOCs, University of Colorado Boulder, USA, May 2017

M. Maione, **F. Graziosi**, J. Arduini, F. Furlani, U. Giostra, P. Cristofanelli and A. Marinoni "Estimating European Black Carbon emissions through an inverse modelling approach" Poster, GAW Symposium 2017, WMO (World Meteorological Organisation) Secretariat, Geneva, Switzerland, April 2017

F. Graziosi, J. Arduini, F. Furlani, U. Giostra and M. Maione "European emissions of CCl_4 based on high frequency atmospheric measurements and a Bayesian inversion method" Poster, SPARC Workshop on Solving the Mystery of Carbon Tetrachloride, EMPA, Zurich, Switzerland, October 2015

M. Maione, **F. Graziosi**, J. Arduini, F. Furlani, U. Giostra, P. Bonasoni "Top down estimates of European emissions of hydrofluorocarbons and comparison with bottom up inventories" Our Common Future Under Climate Change conference, June 2015 Paris, France.

F. Graziosi, F. Furlani, U. Giostra, J. Arduini, S. Reimann, M. K. Vollmer, S. J. O' Doherty , P. Bonasoni and M. Maione "Top down estimates of radiatively active f-gases vs bottom up inventories" InGOS conference October 2014

X.K. Fang**,** R. L. Thompson, T. Saito, Y. Yokouchi, J. Kim, S. Li, K. R. Kim, S. Park, **F. Graziosi**, A. Stohl "Estimating Sulfur Exafluoride (SF_6) emissions in East Asia using in-situ atmospheric observation measurement and invers modelling". Oral presentation American Geosience Union (EGU)

M. Maione, E. Lo Vullo, J. Arduini, F. Furlani, **F. Graziosi** and U. Giostra. "NMHCs at the WMO-GAW Monte Cimone station: trends, seasonal variation and source characterization". Oral Presentation, , NOAA ESRL GLOBAL MONITORING ANNUAL CONFERENCE 2013 Boulder, Colorado, USA, May 2013

M. Maione, E.L. Vullo, J. Arduini, F. Furlani, **F. Graziosi**, U. Giostra and P. Bonasoni. "Volatile Organic Compounds (VOCs) at the World Meteorological Organization (WMO) – Global Atmophere Watch (GAW)" Monte Cimone Station. Poster, ACCENT_Plus Symposium, Urbino, September 2013

M. Maione, U. Giostra, F. Furlani,J. Arduini, **F. Graziosi**, E. Lo Vullo, and P. Bonasoni . "Continuous measurements of climate altering halogenated gases at the Italian Climate Observatory O. Vittori (ICO-OV)". Oral presentation, SISC (Italian Society for Climate Sciences) Conference, Lecce, September 2013.

J. Arduini, **F. Graziosi**, P. Cristofanelli, and M. Maione. "Continuous

measurements of VOCs at the WMO-GAW station of Monte Cimone (Italy)". Poster, 2nd ACTRIS General Meeting - Stresa, Italia, June 2012.

M. Maione, J. Arduini, F. Furlani, U. Giostra, **F. Graziosi**, E. Lo Vullo, P. Bonasoni." Ten years of observations of ozone depleting substances at Monte Cimone (italy) for deriving trends and regional emissions". Poster, IGAC International Conference, Atmospheric Chemistry in the Anthropocene, Beijing, September 2012.

F. Graziosi, J. Arduini, U. Giostra, F. Furlani and M. Maione. "Local influence on methane observations at the Monte Cimone (Italy) WMO-GAW global station". Poster, Planet under Pressure, London, March 2012.

F. Graziosi, M.Maione. J.Arduini, U.Giostra, F.Furlani, P.Cristofanelli, P.Bonasoni. "Methane observation at the monte Cimone wmo-gaw Global Station." Poster, Symposium Urbino June 2011.

U.Giostra, M.Maione, **F. Graziosi**, F.Furlani, J.Arduini, P.Bonasoni, P. Cristofanelli "A three year record of molecular hydrogen and carbon monoxide at an European Mountain site" Poster, Symposium su Atmospheric Chemistry and Physics, in Interlaken, Switzerland .June 8-10, 2010

M. Maione J, Arduini, **F. Graziosi**, U. Giostra, F. Furlani, P. Bonasoni, P. Cristofanelli "Molecular hydrogen observations at the high mountain station of Mt. Cimone (2165 m a.s.l.), Northern Apennines, Italy" Poster , E.G.U. 2-7 in Vienna, Austria May 2009.

PAPER REFEREE

- *July 2021*

Atmospheric Chemistry and Physics (MS No.: acp-2021-261)

- *October 2018*

Atmospheric Chemistry and Physics (MS No.: acp-2018-990)

- *May 2018*

American Chemical Society Earth and Space Chemistry (sp-2018-00062b)

- *April 2018*

Nature (NCOMMS-18-07582)

- *December 2016*

Meteorology and Atmospheric Physics (MAAP-D-16-00088)

PROJECTS

01/08/2006-31/07/2009: EUROHYDROS, A European Network for Atmospheric Hydrogen observations and studies; European Commission, FP6, Contract 036916

01/10/2011-01/12/2015: Grant recipient from the University of Tuscia for a scientific collaboration within the InGOS EU FP7 Integrating Activity (IA) project

01/01/2012-ongoing: RITMARE Flagship Project funded by the Italian Ministry of University and Research.

15/03/2012-30/03/2015: VIIAS, Integrated evaluation of the environmental and health impact of atmospheric pollution, funded by the Italian Ministry for Health.

01/06/2013-31/05/2016. SEFIRA, Socio Economic Implications for individual Responses to Air pollution policies in EU+27, European Commission, FP7.

01/11/2017-2019, ACTRIS- IT (Aerosols, Clouds and Trace Gases), Research Infrastructure, Funded by Fondo Ordinario per il finanziamento degli Enti e istituzioni di ricerca (FOE).

02/02/2021-current, TRACE (TRAcking Carbon Emission) funded by the French National Research agency and corporate partners THALES ALENIA SPACE, SUEZ and TOTAL

MOTHER TONGUE

Italian

OTHER LANGUAGES

English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
B2	B2	B2	B2	B2

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

TECHNICAL SKILLS AND COMPETENCES

knowledge of main operating system Windows and Linux.

knowledge of Windows Office

knowledge of Lagrangian particle dispersion model FLEXPART (FLEXible PARTicle) and FLEXPART_WRF (https://www.flexpart.eu/)

knowledge of meteorological model WRF (Weather Research and Forecasting) (https://www.mmm.ucar.edu/weather-research-and-forecasting-model)

knowledge of meteorological model palm (LES turbulence-resolving large-eddy simulation) (https://palm.muk.uni-hannover.de/trac).

familiarity with meteorological and air quality model CALMET & CALPUF

knowledge of programing language (Fortran 90-77), PYTHON IDL, familiarity with R

knowledge of statistical program : CDO (Climate Data Operators)

ADDITIONAL INFORMATION AND TRAINING COURSES

From 1 to 3 October 2019
Attendance certificate for "Introduction to Python programming" CINECA (Organization and management of the Consortium's activities) Rome.

From 1 to 3 July 2019
Attendance certificate for "Training on dispersion modelling with FLEXPART 10: 1-3 July 2019" at ZAMG (Central Institute for Meteorology and Geodynamics) Vienna.

From 21 March 27 to June 2019
Attendance certificate for "Introduction to Python programming" from FusoLab

From 25 March to 28 March 2019
Attendance certificate for "Introduction to Fortran for scientific computing", from CINECA

From 28 to 30 October 2018
Attendance certificate for "Data Science with R", from CINECA and PRACE (Partnership for advanced computing in Europe).

From 9 February to 13 Fabray 2015
Attendance certificate for "Integrated Environmental and Health Impact Assessment (IEHIA) with special emphasis on air pollution" in University Sapienza of Roma.

From January 2014 to June 2014
Attendance certificate for QGIS (Geographic Information System) Department of Geology at the University of Study of Urbino "Carlo Bò".

From September 2012 to March 2013
Guest on NILU (Norwegian Institute for Air Research) with the aim to improve the Bayesian inversion technique in combination with FLEXPART (Lagragian particle dispersion model) applied for determine the global and regional emissions of polluted gases.

From 17 to 30 October 2010
GAWTEC XIX training Session (Global Atmosphere Watch Training & Education Centre), together al WMO (WORLD METEOROLOGICAL ORGANIZATION) in Hohenpeissenberg/Zugspitze, Germany. Attend a course aimed at research of international network GAW.

From 7 to 19 October 2010
Certificate of completion. National Centre for Atmospheric Science graduate Summer School in Atmospheric Measurement held on the isle of Arran, Scotland 7th - 19th 2010. This practical course is designed for PhD and early career scientists who want to gain confidence, experience and in-depth knowledge about atmospheric science fieldwork.

From March to April 2010
English course obtainment of B2 level at University of Study of Urbino "Carlo Bò".

From 3 to 4 June 2009
Helsinki. Final meeting of Eurohydros project, with exposure of final results and future projects.

From 2 to 7 May 2009
6th European Geophysical Union General Assembly, Vienna, April 2009

From 20 to 24 September 2009
Attendance certificate for "Advanced Statistic for geological science, natural, biological and environmental", at University of study of Urbino, Faculty di Sciences and Technologies.

From February to April 2006
Scholarship for Erasmus project at Institute of Technology, Sligo Ireland.

Data 14/12/2021 **Firma**