Gabriele Curci

Curriculum Vitae

Associate Professor

Dept. of Physical and Chemical Sciences
CETEMPS
University of L'Aquila
Via Vetoio, 67010 Coppito - L'Aquila
Italy

e-mail: gabriele.curci at aquila.infn.it

Phone: +39 0862 433708 (office)
+39 329 533 77 01 (mobile)
Fax: +39 0862 433089

Web: http://pumpkin.aquila.infn.it/gabri/

Date and place of birth: 14/10/1977, Rome (Italy)

Married with Marina, two children (Elena, Francesco)

Synopsis

Gabriele Curci was born in Rome (Italy) on 14/10/1977, he is married (2009) and has two children (2012, 2015). He is currently fixed-term assistant professor at University of L'Aquila. From the same University, he received the degree in Physics (summa cum laude, 2002) and the PhD in Physics (2006), under the supervision of Prof. Guido Visconti.

In 2001 he won a scholarship for international exchange which he spent as a visiting studend at Harvard Unvirsity (USA) for about six months, with the group of Atmospheric Chemistry Modelling of Prof. Daniel J. Jacob, working at the development of a stratospheric chemistry mechanism of the GEOS-Chem global chemistry-transport model (CTM).

During the PhD (holder of a three-years scholarship), he started the collaboration with Prof. Paul I. Palmer (U. Edinburgh) on the inverse modelling of satellite observations of formaldehyde for the estimate of biogenic emissions over Europe. More recently, his activity in the GEOS-Chem modelling community focused on the development of a post-processing module for the calculations of aerosol optical properties from model output (http://pumpkin.aquila.infn.it/flexaod/ and http://wiki.seas.harvard.edu/geos-chem/index.php/FlexAOD).

In 2005 he started the collaboration with the community of the French model CHIMERE. Also thanks to a pilot project funded by the Italian Space Agency (ASI), he implemented the first operational automatic "chemical weather" forecast service in Italy in 2005 (ForeChem, http://pumpkin.aquila.infn.it/forechem/). In 2006-2007 he worked as post-doc at LISA/CNRS (Paris) with Dr. Matthias Beekmann and Dr. Robert Vautard, on the FP6 NatAir project, studying the effect of natural emissions on European air quality. He is currently included in the list of CHIMERE contributors, for the implementation of biogenic emissions module.

In October 2007 he won a position as fixed-term assistant professor at University of L'Aquila and he worked on several projects funded by ASI and EU (PRIMES, QUITSAT, CIRCE) on activities related to the application of CTMs at the regional and global scale, in combination with satellite data. In each project he has a primary role both in the proposal and the realization phases. With his student Dr. Paolo Tuccella, he started in 2009 the implementation of the on-line meteorology-chemistry-radiation model WRF/Chem over Europe. He was research fellow in the period Jan-Nov 2014, and the again fixed-term assistant professor from Dec 2014. Since June 2016 he is in the Scientific Steering Committee of Centre of Excellence CETEMPS and he is responsible for the research line "Environmental modelling".

In December 2016 he won a tenure-track position as assistant professor at University of L'Aquila and since December 2019 is associate professor in the same University.

Dr. Curci has more than 50 publications on indexed journals, H-index: Scopus 21, Google Scholar 24. He serves regularly as reviewer for international journals such as: Atmospheric Environment, Atmospheric Chemistry and Physics, Journal of Geophysical Research, Geophysical Research Letters, Tellus B, Science of the Total Environment, Atmospheric Research, Journal of the Atmospheric Chemistry. Serves as academic editor for: Atmosphere, Advances of Atmospheric Sciences, Advances in Meteorology (until 2018). Since 2004, he has been teaching and mentoring at University of L'Aquila. He was invited for seminars in Italy and abroad. In Dec 2013 he awarded the Italian Professorship, Abilitazione Scientifica Nazionale (ASN), sector 02/C1 "Astronomy, Astrophysics, Earth and Planetary Physics" as Associate Professor.

Education

- Oct 2002–Feb 2006: **PhD in Physics**, Università degli Studi dell'Aquila, Italy.
  - Thesis: *European Biogenic Isoprene Emissions Constrained by Satellite Observations of Formaldehyde*
  - Advisor: Prof. Guido Visconti
- Oct 1996–Sep 2002: **Laurea (M.S.) in Physics**, *Summa Cum Laude*, Università degli Studi dell'Aquila, Italy
  - Thesis: *Global Modelling of Atmospheric Chemistry*
  - Advisor: Prof. Guido Visconti

Professional Positions

- Dec 2019-now: **Associate Professor** at Dept. Physical and Chemical Sciences, CETEMPS (U. L'Aquila, Italy)
- Dec 2016-Dec 2019: **Assistant Professor on tenure-track** (Ricercatore a Tempo Determinato, tipologia (b)) at Dept. Physical and Chemical Sciences, CETEMPS (U. L'Aquila, Italy)
- Dec 2014-Dec 2016: **Assistant Professor** (Ricercatore a Tempo Determinato, tipologia (a)) at Dept. Physical and Chemical Sciences, CETEMPS (U. L'Aquila, Italy)
- Jan 2014-Nov 2014: **Research Fellow** (Assegno Ricerca) at Dept. Physical and Chemical Sciences, CETEMPS (U. L'Aquila, Italy)
- Oct 2007-Oct 2013: **Assistant Professor** (Ricercatore a Tempo Determinato) at Dept. Physics, CETEMPS (U. L'Aquila, Italy)

- Oct 2006–Sep 2007: **Post-doc** at Laboratoire Inter-Universitaire des Systèmes Atmosphériques (LISA), U. Paris XII (France), with Prof. Matthias Beekmann and Prof. Robert Vautard
- Feb 2006–Jan 2007: **Post-doc** at Dept. Physics, CETEMPS (U. L'Aquila, Italy) on the implementation of a high resolution air quality forecast system over Italy
- Oct 2002–Feb 2006: **Graduate Research as PhD student in Physics** at U. L'Aquila (Italy), Dept. Physics, CETEMPS, with Prof. Guido Visconti
- Jun-Oct 2001: **Visiting student at Harvard University** in Cambridge (USA), Atmospheric Chemistry Modeling Group at Harvard, with Prof. Daniel J. Jacob
- Mar 2001–Sep 2002: **Undergraduate Research as student in Physics** at U. L'Aquila (Italy), Dept. Physics, CETEMPS, with Prof. Guido Visconti

Honours and Awards

- Gran Sasso Computing Award 2015
- Italian Professorship, Abilitazione Scientifica Nazionale (ASN) sector 02/C1 "Astronomy, Astrophysics, Earth and Planetary Physics" as Associate Professor, 27/12/2013
- Compliance as CNR researcher (rif. concorso 364.94), 14/07/2011
- Compliance as ENEA researcher (rif. concorso 05/2010), 23/11/2010
- Young Scientist travel support for Goldschmidt conference, 2009
- Telephone interview with Nature News on urban heat islands, 2009
- Young Scientist travel support for IGAC 10th International Conference, 2008
- Telephone interview with National Geographic News on Tunguska asteroid impact, 2008
- Solicited oral presentation at EGU Conference, 2007
- PhD Scholarship, University of L'Aquila, 2003-2005
- Graduated Summa cum laude, University of L'Aquila, 2002
- International Exchange Scholarship (visiting Harvard), University of L'Aquila, 2001

Research Interests and Experience

My main research interests focuses on atmospheric physics and chemistry. The aim is to understand the processes that control the budgets of atmospheric gases and aerosol that play a key role in the context of global climate change and in regional air quality. The main tools adopted are: (1) 0-D, 1-D and 3-D computer models of atmospheric processes that affect chemical species, and (2) data from both in-situ and remote-sensing instruments. Among the latter, satellites have special importance because of the unique property of offering a coherent global view in time and space of the Earth System. I have a great experience in developing and applying chemistry-transport models, thanks also to the direct collaboration with international reference groups, and I have an excellent command of related IT tools. Since June 2016 he is in the Scientific Steering Committee of Centre of Excellence CETEMPS and he is responsible for the research line "Atmospheric chemistry modelling". The main research lines I am currently involved in are summarized as follows:

- Development of a 3-D system for diagnosing and forecasting the regional air quality in Italy. Operational official chemical weather forecast for ARTA Abruzzo (regional environmental agency) is available on the web site: https://sira.artaabruzzo.it/#/modellistica;
- Modelling of the Aerosol Optical properties. I started a project for the development of a post-processing tool for GEOS-Chem, called FlexAOD (http://pumpkin.aquila.infn.it/flexaod/);
- Modelling of the Aerosol-Clouds interaction with the meteorology-chemistry-radiation coupled model WRF/Chem;
- Local dispersion modelling with CALMET/CALPUFF;
- Effects of Biogenic Volatile Organic Compounds (BVOCs) and other biogenic/natural sources on the oxidizing power of the troposphere and on air quality. In the developers list of CHIMERE model biogenic emissions. Estimate of the European Isoprene sources from the inversion of Formaldehyde columns measured from space;
- Satellite retrieval of the chemical composition of atmospheric aerosol;
- Application of regional climate products in support of mitigation and adaptation strategies;
- Meteorological data acquisition and analysis at University of L'Aquila. Realization and maintenance of the real-time web site: http://pumpkin.aquila.infn.it/tempaq/

Author of more than **50 indexed journal publications**. As of 14/08/2019: : Scopus, total citations: 1598, H-index 21. Google Scholar, total citations 2314, H-index 24, i10-index 36.

I serve as **editor** for: Advances in Atmospheric Sciences (2015-), Atmosphere (2015-, special issues “Atmospheric Aerosol Radiative Effects” 2016 e "10th Anniversary of Atmosphere: Air Quality" 2019), Advances in Meteorology (2015-2018).

I serve as **reviewer** for: Atmospheric Environment, Journal of Geophysical Research, Geophysical Research Letters, Atmospheric Chemistry and Physics, Atmospheric Research, Science of the Total Environment, Tellus B, Journal of Environmental Pollution, Aerosol and Air Quality, Meteorology and Atmospheric Physics, Atmosphere, Environmental Science & Technology and others.

I served as **project evaluator** for: European Commission H2020-SPACE 2016, Cy-Tera and Eastern Mediterranean Production Call 2016.

I served as international **event organizer** for: International Summer School on Atmospheric and Oceanic Sciences (ISSAOS): Advanced Programming Techniques for the Earth System Science, August 28 – September 2, 2016, GSSI, L’Aquila (director of the school); Climate Changes: Regional Modeling, data analysis and uncertainties, 27-31 August 2018, L’Aquila, Italy (organizing committee). OltreMet: Oltre la Meteorologia – Ricerca, responsabilità, passione e in-formazione, L'Aquila, 4 maggio 2019 – Palazzo dell'Emiciclo (organizing committee).

I served as **session convener** for: European Aerosol Conference 2015, and Dust Conference 2016, Air Quality Conference 2018.

From 2010 to 2018 I served as **weather forecaster** on regional TV & Radio news of public broadcast (RAI3), about a week every two months. Since 2004 I occasionally contribute to popular pages on meteorology, climate and air quality on national and local press.

Teaching

2020/2021

1. **Lecturer** of course “General Physics I”, Engineering Department, Univ. L’Aquila.
2. **Lecturer** of course “Environmental Meteorology”, Laurea Magistrale Atmospheric Science and Technology (LMAST), Univ. Roma Sapienza - L’Aquila.

2019/2020

3. **Lecturer** of course “General Physics I”, Engineering Department, Univ. L’Aquila.
4. **Lecturer** of course “Environmental Meteorology”, Laurea Magistrale Atmospheric Science and Technology (LMAST), Univ. Roma Sapienza - L’Aquila.

2018/2019

5. **Lecturer** of course “General Physics I”, Engineering Department, Univ. L’Aquila.
6. **Co-lecturer** of course “General Physics”, Environmental Sciences, Univ. L’Aquila.

2017/2018

1. **Lecturer** of course “General Physics I”, Engineering Department, Univ. L’Aquila.
2. **Co-lecturer** of course “Environmental data analysis”, Environmental Sciences, Univ. L’Aquila.
3. **Co-lecturer** of course “Physics of the Atmosphere and the Ocean”, Physics, Univ. L’Aquila.

2016/2017

1. **Lecturer** of course “Environmental data analysis”, Environmental Sciences, Univ. L’Aquila.

2015/2016

2. **Lecturer** of course “General Physics I” (exercises), Faculty of Engineering, Univ. L’Aquila.
3. **Lecturer** of course “General Physics II” (exercises), Faculty of Engineering, Univ. L’Aquila.

2014/2015

4. **Lecturer** of course “General Physics I” (exercises), Faculty of Engineering, Univ. L’Aquila.
5. **Lecturer** of course “General Physics II” (exercises), Faculty of Engineering, Univ. L’Aquila.

2013/2014

6. **Lecturer** of course “General Physics I” (exercises), Faculty of Engineering, Univ. L’Aquila.

2012/2013

7. **Lecturer** of course “General Physics I” (full course), Faculty of Engineering, Univ. L’Aquila.

2011/2012

8. **Assistant** of course “Laboratory of Electromagnetism”, Department of Physics, Univ. L’Aquila.
9. **Assistant** of course "Physics of the Atmosphere and the Ocean", Physics, Univ. L'Aquila.
10. **Lecturer** of course “General Physics I” (exercises), Faculty of Engineering, Univ. L’Aquila.
11. **Seminars** in the frame of course “Atmospheric Chemistry” held by Prof. Antonio Arcadi, Department of Chemistry, Univ. L’Aquila.

2010/2011

12. **Lecturer** of course "Applied Physics and Elements of Biomechanics", Faculty of Sport Sciences, Univ. L'Aquila.
13. **Assistant** of course "Physics of the Atmosphere and the Ocean", Physics, Univ. L'Aquila.

Other tasks

14. Supervised **Postdocs**: Paolo Tuccella (2013-2014), Cecilia Tirelli (2014-2015), Serena Falasca (2015-2018).
15. Director of **1 PhD thesis**: Ilaria Gandolfi (PhD 2019).
16. Co-director of **4 PhD theses**: Paolo Stocchi (PhD 2010), Tony Landi (PhD 2012), Paolo Tuccella (PhD 2013), María Fernanda García Ferreyra (2017-).
17. Director of **1 master thesis**: María Fernanda García Ferreyra (CONAE, Argentina, 2013)
18. Co-director of **4 degree theses**: Paolo Stocchi (Environmental Sciences, 2006), Paolo Tuccella (Physics, 2009), Adriana Tiberi (Envirnmental Biology, 2012), Alessio Monaco (Physics, 2014).
19. Hosted **3 visiting students**: María Fernanda García Ferreyra (Argentina, master, Gen-Lug 2012, PhD Gen-Lug 2018), Muntasir. A. Ibrahim (Sudan, PhD, Ott 2013-Mag 2014, Mag 2015, Feb-Lug 2017), Soledad Represa (Argentina, planned Apr-Sep 2020).
20. Since 2004 I served as tutor to undergraduate and graduate students of the Department of Physics for planning and completing their thesis work.

Projects

1. RAFAEL, Sistema per la previsione e la gestione del rischio sulle Infrastrutture Critiche nel Sud Italia, PNR 2015-2020, 2018-2021.
2. MicroClimArt, Piattaforma per la valutazione dell’impatto del microclima su beni culturali mobili mediante sperimentazione e modelli di dispersione, Regione Lazio POR FESR Lazio 2014-2020, Avviso Pubblico “Beni Culturali e Turismo”, 2020-2021.
3. PRIN 2017, Redox-activity and Health-effects of Atmospheric Primary and Secondary aerosol (RHAPS), 2019-2022.
4. ARTA Abruzzo, collaboration with the regional environmental agency for the implementation of modelling tools for the evaluation and forecast of air quality, Oct 2017-Dec 2021.
5. ECOREGIONS, Identificazione di regioni eco-climatiche in Italia per un sistema di allerta precoce per le malattie trasmesse da vettori, Istituto Zooprofilattico Sperimentale “G. Caporale” Teramo, Nov 2015-Nov 2017

6. Smart Clean Air City L'Aquila, Italian Ministry of the Economic Development, May 2014-May 2017
7. PRIMES ASI project (Synergistic use of PRISMA products with high-resolution meteo-chemical modeling and their validation at ground and from satellite), ASI/CETEMPS contract n. I/017/11/0, Apr 2011-Apr 2015
8. AeroClouds FISR project (Study of Direct and Indirect Effect of Aerosols and Clouds on Climate), Sep 2006-Sep 2009
9. CIRCE EU/FP6 project (Climate change and Impact Research: the Mediterranean Environment), Mar 2007-Sep 2008
10. QUITSAT ASI project (QUalità dell'aria mediante l'Integrazione di misure da Terra, da SAtellite e di modellistica chimica multifase e di Trasporto), Sep 2006-Sep 2009
11. NatAir EU/FP6 project (Improving and Applying Methods for the Calculation of Natural and Biogenic Emissions and Assessment of Impacts on Air Quality), Oct 2006-Jul 2007
12. "Qualità dell'aria" (Air Quality), ASI/CETEMPS contract n. I/065/03/0, Apr-Sep 2004

Languages

- Italian native speaker
- English: fluent written and oral.
    - TOEFL 2001.
    - British Institute third level diploma, 1998.
- French: basic skills for conversation and email.

Computer Experience

- *Programming:* Fortran 77 and 90, Matlab-like, shell scripting.
- *Operating Systems:* Linux as administrator, Windows, Unix, VAX-VMS
- *Other:* Latex, HTML, Office-like, GrADS, GMT, Grace, Gnuplot, NetCDF, HDF
- *Atmospheric Models:* MM5 and WRF (meteorology), GEOS-Chem (global CTM), Chimere (regional CTM), WRF/Chem (coupled meteorology-chemistry)
- *Awards:* European Computer Driving Licence (ECDL), 2002
- *General skills:* usually good and fast in learning more tools

Other Interests

- *Music & Guitar:* attendance to the Guitar School Centro Chitarristico Aquilano, L'Aquila, 1992-1995. Playing with local bands and listening to music and concerts.
- *Past Voluntary Service:* Manitese, cooperation for development, Comunità XXIV Luglio, community for handicapped and non. Course on "Ecology of Communication", L'Aquila, 2003.
- *Sports:* athletics (400 m and 400 m hurdles) at agonistic level, 1990-1996. Swimming at agonistic level, 1983-1989. Soccer and trekking.
- *Traditional Culture:* chairman of *Nuova Giunta Ombra*.
- *Other:* photography, travelling, roaming, reading books, cinema.

Journal Papers

2021

1. **Curci G.,** Guijarro J. A., Di Antonio L., Di Bacco M. Di Lena B., Scorzini A. R. (2021), Building a local climate reference dataset: application to the Abruzzo region (Central Italy), 1930-2019, Int. J. Clim., first published online 06 March 2021, https://doi.org/10.1002/joc.7081.
2. Di Lena, B., **Curci, G.**, Vergni, L. (2021), Analysis of Rainfall Erosivity Trends 1980–2018 in a Complex Terrain Region (Abruzzo, Central Italy) from Rain Gauges and Gridded Datasets. Atmosphere, 12, 657. https://doi.org/10.3390/atmos12060657
3. Tuccella, P., Pitari, G., Colaiuda, V., Raparelli, E., and **Curci, G.**: Present-day radiative effect from radiation-absorbing aerosols in snow, Atmos. Chem. Phys., 21, 6875–6893, https://doi.org/10.5194/acp-21-6875-2021, 2021.

2020

4. Burgos, M. A., Andrews, E., Titos, G., Benedetti, A., Bian, H., Buchard, V., **Curci, G.,** Kipling, Z., Kirkevåg, A., Kokkola, H., Laakso, A., Letertre-Danczak, J., Lund, M. T., Matsui, H., Myhre, G., Randles, C., Schulz, M., van Noije, T., Zhang, K., Alados-Arboledas, L., Baltensperger, U., Jefferson, A., Sherman, J., Sun, J., Weingartner, E., and Zieger, P.: A global model–measurement evaluation of particle light scattering coefficients at elevated relative humidity, Atmos. Chem. Phys., 20, 10231–10258, https://doi.org/10.5194/acp-20-10231-2020, 2020.
5. Ciancio, V., Salata, F., Falasca, S., **Curci, G.,** Golasi, I., de Wilde, P.: Energy demands of buildings in the framework of climate change: an investigation across Europe, Sustainable Cities and Society, https://doi.org/10.1016/j.scs.2020.102213, 2020.
6. de Rubeis T, Falasca S, **Curci G**, Paoletti D, Ambrosini D: Sensitivity of heating performance of an energy self-sufficient building to climate zone, climate change and HVAC system solutions, Sustainable Cities and Society, doi: https://doi.org/10.1016/j.scs.2020.102300, 2020.
7. Falasca, S., **Curci, G.**, Salata, F.: On the association between high outdoor thermo-hygrometric comfort index and severe ground-level ozone: A first investigation, Environmental Research, Available online 21 October 2020, 110306, https://doi.org/10.1016/j.envres.2020.110306, 2020.
8. Jeong, J., Jo, D. S., Park, R. J., Lee, H.-M., **Curci, G.,** Kim, S-W.: Parametric analysis for global single scattering albedo calculations, Atmospheric Environment, Available online 16 May 2020, 117616, https://doi.org/10.1016/j.atmosenv.2020.117616, 2020.
9. Tuccella, P., **Curci, G.,** Pitari, G., Lee, S., Jo, D. S.: Direct radiative effect of absorbing aerosols: sensitivity to mixing state, brown carbon and soil dust refractive index and shape, J. Geophys. Res., https://doi.org/10.1029/2019JD030967, 2020.

2019

10. **Curci, G.,** Alyuz, U., Barò, R., Bianconi, R., Bieser, J., Christensen, J. H., Colette, A., Farrow, A., Francis, X., Jiménez-Guerrero, P., Im, U., Liu, P., Manders, A., Palacios-Peña,

L., Prank, M., Pozzoli, L., Sokhi, R., Solazzo, E., Tuccella, P., Unal, A., Vivanco, M. G., Hogrefe, C., and Galmarini, S.: Modelling black carbon absorption of solar radiation: combining external and internal mixing assumptions, Atmos. Chem. Phys., 19, 181-204, https://doi.org/10.5194/acp-19-181-2019, 2019.

11. Falasca, S., Ciancio, V., Salata, F., Golasi, I., Rosso, F., **Curci, G.:** High albedo materials to counteract heat waves in cities: An assessment of meteorology, buildings energy needs and pedestrian thermal comfort, Building and Environment, https://doi.org/10.1016/j.buildenv.2019.106242, 2019.
12. Ippoliti, C., Candeloro, L., Gilbert, M., Goffredo, M., Mancini, G., **Curci, G.**, Falasca, S., Tora, S., Di Lorenzo, A., Quaglia, M., Conte, A.: Defining ecological regions in Italy based on a multivariate clustering approach: A first step towards a targeted vector borne disease surveillance, PLoS ONE, 14(7) e0219072, https://doi.org/10.1371/journal.pone.0219072, 2019.
13. Jin, X., Fiore, A. M., **Curci, G.,** Lyapustin, A., Civerolo, K., Ku, M., van Donkelaar, A., and Martin, R. V.: Assessing uncertainties of a geophysical approach to estimate surface fine particulate matter distributions from satellite-observed aerosol optical depth, Atmos. Chem. Phys., 19, 295-313, https://doi.org/10.5194/acp-19-295-2019, 2019.
14. Palacios-Peña, L., Jiménez-Guerrero, P., Baró, R., Balzarini, A., Bianconi, R., **Curci, G.,** Landi, T. C., Pirovano, G., Prank, M., Riccio, A., Tuccella, P., and Galmarini, S.: Aerosol optical properties over Europe: an evaluation of the AQMEII Phase 3 simulations against satellite observations, Atmos. Chem. Phys., 19, 2965-2990, https://doi.org/10.5194/acp-19-2965-2019, 2019.

2018

15. Baró, R., Jiménez-Guerrero, P., Stengel, M., Brunner, D., **Curci, G.,** Forkel, R., Neal, L., Palacios-Peña, L., Savage, N., Schaap, M., Tuccella, P., Denier van der Gon, H., and Galmarini, S.: Evaluating cloud properties in an ensemble of regional online coupled models against satellite observations, Atmos. Chem. Phys., 18, 15183-15199, https://doi.org/10.5194/acp-18-15183-2018, 2018.
16. Ciancio, V., Falasca, S., Golasi, I., **Curci, G.,** Coppi, M., Salata, F. (2018), Influence of Input Climatic Data on Simulations of Annual Energy Needs of a Building: EnergyPlus and WRF Modeling for a Case Study in Rome (Italy). Energies 2018, 11, 2835, doi: 10.3390/en11102835
17. Falasca, S. and **Curci, G.** (2018), High-resolution air quality modeling: Sensitivity tests to horizontal resolution and urban canopy with WRF-CHIMERE, Atmos. Environ., 187, 241-254, doi: 10.1016/j.atmosenv.2018.05.048
18. Falasca, S. and **Curci, G.** (2018), Impact of Highly Reflective Materials on Meteorology, PM10 and Ozone in Urban Areas: A Modeling Study with WRF-CHIMERE at High Resolution over Milan (Italy), Urban Science, 2(1), 18, doi:10.3390/urbansci2010018.
19. Galmarini, S., Kioutsioukis, I., Solazzo, E., Alyuz, U., Balzarini, A., Bellasio, R., Benedictow, A. M. K., Bianconi, R., Bieser, J., Brandt, J., Christensen, J. H., Colette, A., **Curci, G.,** Davila, Y., Dong, X., Flemming, J., Francis, X., Fraser, A., Fu, J., Henze, D. K., Hogrefe, C., Im, U., Garcia Vivanco, M., Jiménez-Guerrero, P., Jonson, J. E., Kitwiroon, N., Manders, A., Mathur, R., Palacios-Peña, L., Pirovano, G., Pozzoli, L., Prank, M., Schultz, M., Sokhi, R. S., Sudo, K., Tuccella, P., Takemura, T., Sekiya, T., and Unal, A.:

Two-scale multi-model ensemble: is a hybrid ensemble of opportunity telling us more?, Atmos. Chem. Phys., 18, 8727-8744, https://doi.org/10.5194/acp-18-8727-2018, 2018.

20. Im, U., Brandt, J., Geels, C., Hansen, K. M., Christensen, J. H., Andersen, M. S., Solazzo, E., Kioutsioukis, I., Alyuz, U., Balzarini, A., Baro, R., Bellasio, R., Bianconi, R., Bieser, J., Colette, A., **Curci, G.,** Farrow, A., Flemming, J., Fraser, A., Jimenez-Guerrero, P., Kitwiroon, N., Liang, C.-K., Nopmongcol, U., Pirovano, G., Pozzoli, L., Prank, M., Rose, R., Sokhi, R., Tuccella, P., Unal, A., Vivanco, M. G., West, J., Yarwood, G., Hogrefe, C., and Galmarini, S. (2018), Assessment and economic valuation of air pollution impacts on human health over Europe and the United States as calculated by a multi-model ensemble in the framework of AQMEII3, Atmos. Chem. Phys., 18, 5967-5989, https://doi.org/10.5194/acp-18-5967-2018.
21. Im, U., Christensen, J. H., Geels, C., Hansen, K. M., Brandt, J., Solazzo, E., Alyuz, U., Balzarini, A., Baro, R., Bellasio, R., Bianconi, R., Bieser, J., Colette, A., **Curci, G.,** Farrow, A., Flemming, J., Fraser, A., Jimenez-Guerrero, P., Kitwiroon, N., Liu, P., Nopmongcol, U., Palacios-Peña, L., Pirovano, G., Pozzoli, L., Prank, M., Rose, R., Sokhi, R., Tuccella, P., Unal, A., Vivanco, M. G., Yarwood, G., Hogrefe, C., and Galmarini, S.: Influence of anthropogenic emissions and boundary conditions on multi-model simulations of major air pollutants over Europe and North America in the framework of AQMEII3, Atmos. Chem. Phys., 18, 8929-8952, https://doi.org/10.5194/acp-18-8929-2018, 2018.
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13. **Curci, G.** (2012), On the impact of time-resolved boundary conditions on the simulation of surface ozone and PM10, Air Pollution – Monitoring, Modelling, Health and Control, ISBN: 978-953-51-0381-3
14. **G. Curci** (2012), An Air Quality Forecasting tool over Italy (ForeChem), *in Air Pollution Modelling and its Application XXI*, Edited by Douw G. Steyn and Silvia Trini Castelli, ISBN 978-94-007-1358-1
15. Tuccella P., **G. Curci**, G. Visconti (2012), Aerosol simulation with fully coupled "online" meteorology-chemistry model WRF/Chem over Europe: preliminary results, *in Air Pollution Modelling and its Application XXI*, Edited by Douw G. Steyn and Silvia Trini Castelli, ISBN 978-94-007-1358-1
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17. **G. Curci** and G. Visconti (2011), Modelli e dati per lo studio dei cambiamenti climatici e la qualità dell'aria, in Rivista Abruzzese, Rassegna Trimestrale di Cultura, Giugno 2011, ISBN 978-88-96804-15-5 (in italiano)
18. Del Frate F., A. Di Noia, P. Sellitto, **G. Curci** (2010), Feasibility of aerosol type identification from hyperspectral data. In: Hyperspectral Workshop 2010. ESA-ESRIN Frascati, 17-19 March 2010
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27. Visconti, G., **G. Curci**, G. Redaelli, B. Grassi (2007), Synergistic Use of Satellite Data with the Global Chemistry-Transport Model GEOS-Chem: Formaldehyde Column over Europe as a proxy for Biogenic Emissions and CTM Validation using Satellite Data, in J.P Burrows and P. Borrell (eds.) *Measuring Tropospheric Trace Constituents from Space, AT2 in 2005-6*, ACCENT Secretariat Urbino, February 2007, Report 1.2007 (part 3); p. 252-255
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29. **Curci G.,** L. Bernardini, M. Rinaldi, P. Stocchi, G. Visconti (2006), L'uso di modelli regionali ad alta risoluzione per lo studio e la previsione della qualità dell'aria, in *Atti del Convegno Accademia dei Lincei "XXIII Giornata dell'ambiente"* (in italian)
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31. **Curci, G.,** M. Rinaldi, P. Stocchi, L. Bernardini, G. Visconti (2005), Air Quality modelling over the Italian territory. In: GRA - Geophysical Research Abstracts, vol. 7
32. **Curci, G.,** P. Palmer, M. Fu, G. Visconti (2005), Inverting GOME Formaldehyde column for biogenic emissions over Europe, in *Proceedings of First ACCENT Symposium "The Changing Chemical Climate of the Atmosphere"*
33. Visconti G., **G. Curci,** G. Redaelli, B. Grassi, Synergistic Use of Satellite Data with the Global Chemistry-Transport Model GEOS-Chem: Formaldehyde Column over Europe as a proxy for Biogenic Emissions and CTM Validation using Satellite Data, in J.P Burrows and P. Borrell (eds.) *Tropospheric Sounding from Space; AT2 in 2004-5,* ACCENT Secretariat Urbino, 2005, Report 6.05; p. 268-272
34. **Curci, G.,** G. Visconti, D. J. Jacob and M. J. Evans (2004), Tropospheric fate of Tunguska generated nitrogen oxides. In: GRA - Geophysical Research Abstracts, vol. 6

Oral Presentations

Invited talks

1. **Curci, G.** (2020), Climate perspectives on the development of the city of L'Aquila: coordinating efforts on mitigation, adaptation and sustainability, Covenant of Mayor for Climate and Energy. Twinning Programme, L'Aquila – Figueira da Foz, 5 June 2020, L'Aquila, Italy
2. **Curci, G.** (2019), Cambiamento Climatico globale: Evidenze e cause, Corso ECM su "Zoonosi e Malattie Emergenti", 5 dicembre 2019, Centro Servizi Culturali, Avezzano

3. **Curci, G.** (2019), Instructor for the school "Monitoreo Ambiental: de la nanociencia a la teledetección", Nuevos paradigmas y participación ciudadana, Centro latinoamericano de formacion interdisciplinaria (CELFI), 26th Aug – 5th Sep 2019, Cordoba, Argentina
4. **Curci, G.** (2019), Adaptation strategies to climate change in urban areas, 11th Summer School Awareness and Responsibility of Environmental Risk, Design for Risk Reduction: Dual Towers, 23-31 August 2019, L'Aquila, Italy.
5. **Curci, G.** (2019), Ciclo di seminari in scuole elementari e medie di Pescasseroli e Trasacco (AQ) sul tema dei cambiamenti climatici, con semplici esperimenti in classe, Apr-Mag 2019.
6. **Curci, G.** (2019), corso di aggiornamento professionale sulla "Simulazione della dispersione di inquinanti atmosferici a scala locale", organizzato dall'Agenzia Regionale per la Tutela dell'Ambiente (ARTA), 19-20 febbraio 2019, Pescara (PE).
7. **Curci, G.** (2018), The use of climate data for the surveillance of vector-borne diseases: limitations and solutions, Workshop on surveillance of emerging arboviruses in the Mediterranean region under a "One Health" approach, 11-12 Dec 2018, CIFIV-IZS, Teramo (Italy)
8. **Curci, G.** (2018), Changes in Climate and Environment in the Mediterranean and Sahel regions, One Health Scientific Conference, 26-27 Nov 2018, Istituto Superiore Sanità (ISS), Roma (Italy)
9. **Curci, G.** (2018), Cambiamento Climatico globale: Evidenze e cause, Cambiamenti Climatici e Salute, 3-4 Ott 2018, Caltanissetta (Italy)
10. **Curci, G.** (2018), Climate Change at the regional scale and impact on urban areas, 10th International Summer School Awarness and Responsibility of Environmental Risk Design for risk reduction: Walkable city 3rd – 13th Sep 2018, L'Aquila (Italy)
11. **Curci, G.,** Falasca, S., Gandolfi, I. (2018), Panoramica attività modellistiche per la qualità dell'aria al CETEMPS. Previsioni ad alta risoluzione e caso studio di Civitavecchia, La dispersione degli inquinanti in atmosfera Il monitoraggio dell'area portuale di Civitavecchia (RM), 5 aprile 2018, ARPA Lazio
12. **Curci G.**, Falasca, S., Colaiuda, V. (2018), Progetto pilota «PescARIA»: Predire e gestire la qualità dell'ARIA nell'area metropolitana pescarese, Incontro con le Associazioni, 8 febbraio 2018, Comune di Pescara.
13. **Curci, G.** (2017), corso di formazione "Modellistica su dispersione degli inquinanti aerodispersi e valutazione studi di ricaduta delle emissioni in atmosfera", organizzato dall'Agenzia Regionale per la Tutela dell'Ambiente (ARTA), 7-8 novembre 2017, Pescara (PE).
14. **Curci, G.** (2017), Climate Change and Related Environmental Risk, 9th International Summer School Awarness and Responsibility of Environmental Risk Sound and Soundscape: Design for risk reduction 4th – 15th Sep 2017, L'Aquila (Italy)
15. **Curci, G.** (2016), Clima - cambiamenti - impatto sull'ambiente montano, COP 21 e adempimenti, 6° Corso Nazionale Formazione ONTAM 2016, 28 giugno 2016, Civitella Alfedena (AQ).
16. **Curci, G.** (2016), GLOBAL TROPOSPHERIC AERSOL MODELING AT DSFC-CETEMPS, UNIVERSITY OF L'AQUILA, "Open-IFS for teaching and research" workshop, 10th May 2016, GSSI, L'Aquila
17. **Curci, G.** (2016), AriaProba: Previsione Probabilistica della Qualità dell'Aria, Open Day LNGS 2016, Gran Sasso Computing Award, Assergi (AQ), 29 May 2016
18. **Curci, G.** (2014), La centrale a biomasse di Bazzano: Valutazione dell'impatto sulla qualità dell'aria locale, Seminario presso il Dipartimento di Ingegneria Civile, Edile-Architettura e Ambientale, Università dell'Aquila, 7 May 2014.

19. **Curci, G.** (2014), Input meteorologico per di modelli di qualità dell'aria: ricostruzione modellistica e validazione, Giornata modellistica qualità dell'aria, ENEA Bologna, 29 January 2014.
20. **Curci, G.** (2012), Can we retrieve aerosol composition from space?, Global Change Seminar Series, School of GeoSciences, University of Edinburgh, 2 May 2012.
21. **Curci, G.** (2012), Simulation of stable boundary layer with WRF-CHIMERE and impact on pollutant concentrations, COST0702 SWG on "Instrument synergy to study Mixing Height in Stable conditions", ISAC-CNR Rome, 16 April 2012.
22. **Curci, G.**, G. Visconti (2010), Modelli e dati per lo studio dei cambiamenti climatici e la qualità dell'aria, Invited seminar at Consorzio Mario Negri Sud, Santa Maria Imbaro (CH), Italy, Convegno Abruzzo, Ambiente e Salute, 7 May 2010.
23. **Curci, G.** (2010), Atmospheric Chemistry and Transport Modelling: Introduction and current activities at CETEMPS (also involving satellite data), Invited seminar at University of Tor Vergata, Rome, Italy, 28 January 2010.
24. **Curci, G.** (2007), Strumenti modellistici per la Chimica Atmosferica @ CETEMPS, Incontro su "Misure e Modelli", CNR-Roma, 26 November 2007.

Conferences

25. **Curci, G.,** S Falasca, Simple statistical bias correction techniques greatly improve moderate resolution air quality forecast at station level, EGU General Assembly, Vienna, 2017
26. Falasca, S., **G Curci,** L Candeloro, A Conte, C Ippoliti, Observed ozone exceedances in Italy: statistical analysis and modelling in the period 2002-2015, EGU General Assembly, Vienna, 2017
27. **Curci, G.** (2016), Cambiamenti climatici e qualità dell'aria, Seconda Giornata Scienza e Ambiente Univesità degli Studi dell'Aquila, "Evidenze del Cambiamento Climatico: dalla scala globale a quella locale", 18 March 2016.
28. **Curci, G.** et al. (2015), Satellite Aerosol Composition Retrieval using Neural Networks, 3rd AeroSAT worshop, 8-9 October 2015, Frascati, Italy.
29. **Curci, G.** et al. (2015), Sensitivity of aerosol optical depth, single scattering albedo, and phase function calculations to assumptions on physical and chemical properties of aerosol, European Aerosol Conference, Milan, 6-11 Sep 2015.
30. **Curci, G.** et al. (2015), Analysis of a summertime case study in Milan: insights on the formation of aerosol layers in and above the boundary layer, and their contribution to ground-level particulate matter, European Aerosol Conference, Milan, 6-11 Sep 2015.
31. **Curci, G.** (2014), Previsioni del tempo … chimico, XXXII giornata ambiente, Controllo della qualità dell'aria e delle acque: Tecniche & problematiche, L'Aquila, 31 Oct 2014
32. Jimenez-Guerrero, P., Balzarini, A., Baró, R., **Curci, G.,** Forkel, R., Hirtl, M., Honzak, L., Langer, M., Pérez, J. L., Pirovano, G., San José, R., Tuccella, P., Werhahn, J., and Zabkar, R. (2014), Describing the direct and indirect radiative effects of atmospheric aerosols over Europe by using coupled meteorology-chemistry simulations: a contribution from the AQMEII-Phase II exercise, EGU General Assembly 2014, 30 Apr 2014.
33. Visconti, G., **G. Curci,** P. Tuccella (2013), Energia e ambiente: impatto dell'inclusione dell'interazione aerosol-nube in un modello meteorologico sulla previsione della radiazione solare a terra, *"La sfida dei Terawatt. Quale ricerca per l'energia del futuro?*", XXXI Giornata dell'Ambiente, Accademia Nazionale dei Lincei, 5-6 November 2013.

34. **Curci, G.,** L. Ferrero, P. Tuccella, F. Angelini, F. Barnaba, E. Bolzacchini, M. C. Facchini, G. P. Gobbi, T. C. Landi, M. G. Perrone, S. Sangiorgi, P. Stocchi (2013), On the interplay between upper and ground levels dynamics and chemistry in determining the surface aerosol budget, 33rd International Technical Meeting on Air Pollution Modelling and its Applications 26-30 August 2013, Miami, FL, USA.
35. Tuccella, P., **G. Curci,** S. Crumeyrolle, G. Visconti (2013), Simulation aerosol-clouds interaction over Europe with the meteorology-chemistry-radiation eulerian model WRF/Chem, 33rd International Technical Meeting on Air Pollution Modelling and its Applications 26-30 August 2013, Miami, FL, USA..
36. **Curci, G.,** (2013), Sensitivity tests with GEOS-Chem aerosol optical properties in comparison with satellite and sunphotometer, 6th International GEOS-Chem Meeting, Harvard University, Cambridge, MA, USA, 6-9 May 2013.
37. **Curci, G.,** (2012), FlexAOD: A Chemistry-transport Model Post-processing Tool for A Flexible Calculation of Aerosol Optical Properties, 9th International Symposium on Tropospheric Profiling, L'Aquila, Italy, September 2012
38. Tuccella, P., **G. Curci**, D. Cimini, G. Visconti (2012), Verso un modello accoppiato meteorologia-chimca per la previsione della qualità dell'aria, V Convegno Nazionale "Il controllo degli agenti fisici: Ambiente, salute e qualità della vita", Novara 6-8 giugno 2012
39. Tuccella, P., G. A. Grell. S. A. McKeen, R. Ahmadov, **G. Curci,** G. Visconti (2012), Toward a new chemical mechanism in WRF/Chem for direct and indirect aerosol effects: A focus on the carbonaceous aerosol, *32nd Technical Meeting on Air Pollution Modelling and its Application*, Utrecht, The Netherlands, 8 May 2012
40. **Curci G.,** P. Tuccella, G. Cinque, G. Visconti (2011), Impatto sulla qualità dell'aria della centrale elettrica a biomasse di Bazzano: valutazione modellistica e suggerimenti per un sito di monitoraggio, Energia da biomasse: Prospettive di sviluppo tra innovazione tecnologica ed economia locale, Facoltà di Ingegneria, Università dell'Aquila, 19 October 2011 *(in italiano)*
41. **Curci G.** (2011), A new GEOS-Chem post-processing tool for aerosol optical properties calculations, 5th International GEOS-Chem Meeting, Harvard University, Cambridge, MA, USA, 2-5 May 2011.
42. **Curci G.,** P. Tuccella, G. Cinque, G. Visconti (2011), Impact of a renewable biomass energy power plant in urban landscape with complex terrain in Central Italy: modelling assessment and suggestions for monitoring site, EGU2011-8055, European Geosciences Union General Assembly 2011, Vienna, Austria, 3-8 April 2011.
43. Barnaba F., F. Angelini, **G. Curci**, G. P. Gobbi (2011), An important fingerprint of wildfires on the European aerosol load, EGU2011-2260, European Geosciences Union General Assembly 2011, Vienna, Austria, 3-8 April 2011.
44. Landi, T. C., **G. Curci** (2011), Modeling Aerosol Optical Properties with AODEM: accounting for non-sphericity of dust particles, EGU2011-3958, European Geosciences Union General Assembly 2011, Vienna, Austria, 3-8 April 2011.
45. Tuccella P., **G. Curci**, G. Visconti (2010), Aerosol simulation with coupled "online" meteorology-radiation-chemistry model WRF/Chem over Europe, *31st Technical Meeting on Air Pollution Modelling and its Application*, Torino, Italy, Sep 2010
46. **Curci, G.,** Di Nicolantonio, W., Cacciari, A., Gas & aerosol boundary conditions to Chimere from GEOS-Chem, GEOS-Chem users' meeting, Harvard University, Cambridge, MA, USA, 7-10 April 2009
47. **Curci, G.,** Emissioni Biogeniche di Composti Organici Volatili: Modellistica e Impatto su livelli di Ozono e Particolato, Seminari CETEMPS, Univ. L'Aquila, 10 April 2008 *(in italiano)*

48. **Curci, G.**, Stocchi, P., Redaelli, G., Attività di Ricerca e Validazione CETEMPS per QUITSAT, Meeting QUITSAT QRv1, Carlo Gavazzi Space-Milano, 18 March 2008 *(in italiano)*
49. **Curci, G.,** Beekmann, M., Vautard, Impact of natural and biogenic emissions on Air Quality, NatAir workshop, Brussels, Belgium, 26 June 2007
50. **Curci, G.,** Beekmann, M., Vautard, R., Smiatek, G., Steinbrecher, R., Pfeiffer, H., Theloke, J., Friedrich, R., Model study of the impact of updated European biogenic emission inventory from NatAir on air quality using Chimere chemistry-transport model, EGU2007-A-08679 in Session AS3.06: Air Pollution Modelling, EGU General Assembly, Vienna, Austria, 15-20 April 2007 *(solicited)*
51. **Curci, G.,** Biogenic emissions and VOC oxidation, 3rd GEOS-CHEM Users' Meeting, Harvard University, Cambridge, MA, USA, 11-13 April 2007
52. Stocchi P., T. Tiberi, **G. Curci,** G. Visconti, L. Bernardini, Applicazione della catena modellistica MM5-Chimere al bacino padano, Seminario di Presentazione dei risultati finali delle attività dell'osservatorio dei modelli e applicazione su area padana, Aosta, Italy, 28 March 2007
53. **Curci, G.,** M. Beekmann, R. Vautard, First results and simulations plan with CHIMERE for NATAIR (WP5), NatAir Project Meeting, Oxford, UK, 23-24 October 2006
54. **Curci, G.,** L'uso di modelli regionali ad alta risoluzione per lo studio e la previsione della qualità dell'aria, XXIII giornata dell'ambiente: Qualità dell'aria nelle città italiane, Accademia Nazionale dei Lincei, Rome, Italy, 6 June 2005
55. **Curci, G.,** M. Rinaldi, P. Stocchi, L. Bernardini, G. Visconti, Air Quality modelling over the Italian territory, EGU05-A-01002 in Session AS3.16: Air Pollution Modelling, EGU 2nd General Assembly, Vienna, Austria, 24-29 April 2005
56. **Curci, G.,** Formaldehyde columns over Europe as proxy for biogenic emissions, 2nd GEOS-CHEM Users' Meeting, Harvard University, Cambridge, MA, USA, 4-6 April 2005
57. **Curci, G.,** M. Rinaldi, P. Stocchi, L. Bernardini, G. Visconti, Air Quality modelling over the Italian territory using the CHIMERE regional model, 1st CHIMERE workshop, Ecole Polytechnique, Palaiseau (Paris), France, 21-22 March 2005
58. **Curci, G.,** G. Visconti, Synergistic Use of Satellite Data with the Global Chemistry-Transport Model GEOS-CHEM: Formaldehyde column over Europe as a proxy for biogenic emissions and CTM validation using satellite data, Second ACCENT AT2 workshop, Hotel Munte am Stadtwald, Bremem, Germany, 31 January-2 February 2005
59. **Curci, G.,** Chance or Chaos? Quantifying nonlinearity and chaoticity in observed geophysical timeseries, Workshop on the Physics and Modeling of Climate Dynamics, Potsdam Institute for Climate Impact Research (PIK), Germany, 13-14 January 2005
60. **Curci, G.,** G. Visconti, D. J. Jacob and M. J. Evans, Tropospheric fate of Tunguska generated nitrogen oxides, EGU04-A-02116 in Session AS3.03: Trace gases in the atmosphere: observations and modelling, EGU 1st General Assembly, Nice, France, 29 April 2004
61. **Curci, G.,** D. J. Jacob, G. Visconti, Stratospheric Chemistry and SMVGEAR II in GEOS-CHEM Model, First GEOS-CHEM User's Meeting, Harvard University, Cambridge, MA, USA, 2-3 June 2003

Seminars (since 2016)

62. **Curci, G.** (2016), GLOBAL TROPOSPHERIC AERSOL MODELING AT DSFC-CETEMPS, UNIVERSITY OF L'AQUILA, "Open-IFS for teaching and research" workshop, 10th May 2016, GSSI, L'Aquila

63. **Curci, G.** (2016), Gli aerosol atmosferici, Seminari Didattici, 11 May 2016, Università dell'Aquila
64. **Curci, G**. et al. (2016), Composizione Atmosferica, Radiazione, Telerilevamento, Open Days Università dell'Aquila, 11 May 2016, L'Aquila
65. **Curci, G.** (2016), AriaProba: Previsione Probabilistica della Qualità dell'Aria, Open Day LNGS 2016, Gran Sasso Computing Award, Assergi (AQ), 29 May 2016

Poster Presentations

1. **Curci, G.** et al., Apennine Distributed Atmospheric Mesoscale Observatory (ADAMO): planning for a new atmospheric distributed observatory in complex orography in central Italy, 35th International Conference on Alpine Meteorology (ICAM) 2019, 2 - 6 September 2019, Riva del Garda, Italy.
2. **Curci, G. et al.,** Three-dimensional wind analysis for air quality modelling applications at the Civitavecchia port site (Central Italy), Air Quality Conference, Barcellona, 12-16 March 2018.
3. **Curci, G.,** Combining external and internal mixing representation of atmospheric aerosol for optical properties calculations: focus on absorption properties over Europe and North America using AERONET observations and AQMEII simulations, EGU General Assembly, Vienna, 2017
4. Gandolfi, I, **G Curci,** S Falasca, L Ferrero. Analysis and high resolution modelling of black carbon vertical profiles measured over three Italian valleys, EGU General Assembly, Vienna, 2017
5. Park, RJ, DS Jo, **G Curci,** HM Lee, Global model simulation of single scattering albedo: A sensitivity analysis, EGU General Assembly, Vienna, 2017
6. Falasca, S., **Curci, G.** (2016), Impatto della riallocazione spaziale delle sorgenti emissive su simulazioni di qualità dell'aria ad alta risoluzione, PM2016, Italian Aerosol Society general assembly, 17-20 May 2016, Rome.
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