

PERSONAL INFORMATION

Mario Adani



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Sex Male | Date of birth 04/08/1977 | Nationality Italian

WORK EXPERIENCE

12/2012-up to now:

Researcher

Italian National Agency for New Technologies, Energy and Sustainable Economic Development. (ENEA)

- Research activity in air quality modelling systems and data assimilation
- Development of European Air Quality Forecasting System (MINNI)
- Development of Italian Air Quality Forecasting System (FORAIR-IT)
- Scientific responsible for international project:
  - CAMS2\_40
  - CAMS\_50
  - CAMS\_63
- International Projects:
  - LIFE18 PRE IT 003 - Vegetation for Urban Green Air Quality Plans (VEG-GAP)
  - EURODELTA -rends, EURODELTA-Carb EURODELTA-BaP
- National projects:
  - Collaboration Agreement MATTM / ISPRA / ENEA / ISS / CNR for carrying out activities related to the implementation of the NEC Directive on emission ceilings.
  - Collaboration Agreement between ENEA and MATTM for "Development of techniques for the valorisation of waste and support actions for Italian participation in international and European round tables on air quality issues"
  - RPASINAIR Integration of Remotely Piloted Aircraft Systems in non-segregated airspace for services
  - Executive deed of the Memorandum of Understanding between the Ministry of the Environment and the Protection of the Territory and the Sea (MATTM) and the National Agency for New Technologies, Energy and Sustainable Economic Development (ENEA) for activities relating to the "Mapping of the energy potential from renewable sources in Lesotho"
  - PAR 2016 - PROJECT D.6 "Development of an integrated model of the Urban Smart District"
  - Agreement between ENEA and the Ministry of the Environment and the Protection of the Territory and the Sea for "Study and analysis of technological options for efficiency in the use and sustainable management of resources"
  - Agreement between ENEA and the Ministry of the Environment and the Protection of the Territory and the Sea for "Study and analysis of technological options for efficiency in the use and sustainable management of resources"
  - Execution of a study for the "Estimation of the impact of the coal-fired thermoelectric power plants of Brindisi and La Spezia on air quality by means of experimental sampling and analysis campaigns and multi-source dispersion and receptor models"
  - ENEL Torrevaldaliga - service assignment by enel Produzione spa for the stage relating to the health damage around the ENEL Torrevaldaliga power plant in Civitavecchia. enel torrevaldaliga
  - Agreement between MAE and ENEA for technical assistance on waste management, air quality and pollution from persistent organic pollutants as part of the "integrated management of solid urban waste in the Baalbeck area".
  - Agreement between MATTM, ministry of the environment and the protection of the sea, ENEA, national agency for new technologies, energy and economic development agreement between MATTM, ENEA, CNR, the Istituto Superiore di Sanita' for the realization of the "project of common interest / special networks modeling / Ministerial Decree of 16 October 2006".

Business or sector Public research Agency

04/2008-12/2012:

**Researcher**

National Institute for Geophysics and Volcanology (INGV)

- Research activity in ocean wave coupling systems and data assimilation
- International Projects:
  - NEMO Development Team
  - MYOcean2 Reanalysis Production
  - MyOcean: Development of wave-ocean interaction
  - CIRCE: Development of a reanalysis tools.

Business or sector Public research Institute

01/2008-3/2008:

**Researcher**

Euro-Mediterranean Center for Climate Change. (CMCC)

- Research activity in ocean data assimilation systems

Business or sector Research foundation

10/2002-09/2004:

**Student fellowship**

National Institute for Geophysics and Volcanology (INGV)

- Ocean data analysis
- International Projects:
  - MFSTEP: Assesment of Mediterranean sea analysis and forecast
  - Mersea St-1: Development of analysis tools for inter-comparison of model skills

Business or sector Public research Institute

EDUCATION AND TRAINING

01/2005-12/2007

**Ph.D Student in Geophisics**

University of Bologna (UNIBO)

- Thesis title: Reanalysis Techniques for the numerical modelling of the Mediterranean Sea Circulation

01/1996-6/2002

**Degree in Marine environmental Science**

University of Bologna (UNIBO)

- Thesis title: La variabilità della circolazione nel Mare Mediterraneo tramite l'analisi multivariata della varianza (The Mediterranean sea variability using multivariate variance analysis technique)

PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

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](#)

Communication skills

- Good communication skills acquired during national and international projects

Job-related skills

Excellent knowledge of Unix/Linux operating system. Excellent knowledge of programming languages as Fortran, Matlab, python. Discrete knowledge of NCL, GIS.  
 Experience in High Performance computing and parallel programming  
 Experience using different Numerical Models: Ocean General Circulation Model NEMO, wave model WAM and WaveWatch III, Atmospheric Model WRF and WRF-CHEM, Chemical Transport Model FARM, Regional Climate Model RegCM.

ADDITIONAL INFORMATION  
Peer Review Publication

- Barré, J., Petetin, H., Colette, A., Guevara, M., Peuch, V.-H., Rouil, L., Engelen, R., Inness, A., Flemming, J., Pérez García-Pando, C., Bowdalo, D., Meleux, F., Geels, C., Christensen, J. H., Gauss, M., Benedictow, A., Tsyro, S., Friese, E., Struzewska, J., Kaminski, J. W., Douros, J., Timmermans, R., Robertson, L., Adani, M., Jorba, O., Joly, M., and Kouznetsov, R., (2021). Estimating lockdown-induced European NO<sub>2</sub> changes using satellite and surface observations and air quality models, *Atmos. Chem. Phys.*, 21, 7373–7394, <https://doi.org/10.5194/acp-21-7373-2021>, 2021.
- D'Elia, I. and Briganti, G. and Vitali, L. and Piersanti, A. and Righini, G. and D'Isidoro, M. and Cappelletti, A. and Mircea, M. and Adani, M. and Zanini, G. and Ciancarella, L., (2021). Measured and modelled air quality trends in Italy over the period 2003–2010, *acp*, 21, 2021,13,10825--10849, <https://doi.org/10.5194/acp-21-10825-2021>, <https://acp.copernicus.org/articles/21/10825/2021/>
- Villani M.G., Russo F., Adani M., Piersanti A., Vitali L, Tinarelli G., Ciancarella L., Zanini G., Donato A., Rinaldi M., Carbone C., Decesari S., Sängler P, (2021). Evaluating the Impact of a Wall-Type Green Infrastructure on PM<sub>10</sub> and NO<sub>x</sub> Concentrations in an Urban Street Environment, *Atmosphere*, 12, 2021, 7, [10.3390/atmos12070839](https://doi.org/10.3390/atmos12070839), <https://www.mdpi.com/2073-4433/12/7/839>
- Ragazzola F., Kolzenburg R, Adani M., Bordone A., Cantoni C., Cerrati G, Ciuffardi T., Cocito S., Luchetta A., Montagna P., Nannini M, Page D.C., Peirano A., Raiteri G., Lombardi C., (2021). Carbonate chemistry and temperature dynamics in an alga dominated habitat, *Regional Studies in Marine Science*, 44, 2021,101770,ISSN 2352-4855, <https://doi.org/10.1016/j.rsma.2021.101770>, <https://www.sciencedirect.com/science/article/pii/S2352485521001626>
- Ragazzola F., Kolzenburg R., Adani M, Bordone A, Cantoni C., Cerrati C., Ciuffardi T., Cocito S., Luchetta A., Montagna P, Nannini M., Page D.C., Peirano A., Raiteri G, Lombardi C., (2021). Carbonate chemistry and temperature dynamics in an alga dominated habitat, *Regional Studies in Marine Science*, Volume 44, 2021, 101770, ISSN 2352-4855, <https://doi.org/10.1016/j.rsma.2021.101770>.
- Adani, M.; Piersanti, A.; Ciancarella, L.; D'Isidoro, M., Villani, M.G.; Vitali, L., (2020). Preliminary Tests on the Sensitivity of the FORAIR\_IT Air Quality Forecasting System to Different Meteorological Drivers. *Atmosphere* 2020, 11, 574. <https://doi.org/10.3390/atmos11060574>
- D'Isidoro M., Briganti G., Vitali L., Righini G., Adani M., Guarnieri G., Moretti L., Raliselo M., Mahahabisa M., Ciancarella L., Zanini G, Fino E., (2020). Estimation of solar and wind energy resources over Lesotho and their complementarity by means of WRF yearly simulation at high resolution, *Renewable Energy*, 158, 2020, 114-129, ISSN 0960-1481, <https://doi.org/10.1016/j.renene.2020.05.106>, <https://www.sciencedirect.com/science/article/pii/S0960148120308041>.
- Ciarelli G., Colette A., Schucht S., Beekmann M., Andersson C., Manders-Groot A., Mircea M., Tsyro S., Fagerli H., Ortiz G. A., Adani M., Briganti G., Cappelletti A., D'Isidoro M., Cuvelier C., Couvidat F., Meleux F., Bessagnet B., (2019). Long-term health impact assessment of total PM<sub>2.5</sub> in Europe during the 1990–2015 period, *Atmospheric Environment: X*, 3, 2019, 100032, ISSN 2590-1621, <https://doi.org/10.1016/j.aeaoa.2019.100032>.

- Theobald, M. R., Vivanco, M. G., Aas, W., Andersson, C., Ciarelli, G., Couvidat, F., Cuvelier, K., Manders, A., Mircea, M., Pay, M.-T., Tsyro, S., Adani, M., Bergström, R., Bessagnet, B., Briganti, G., Cappelletti, A., D'Isidoro, M., Fagerli, H., Mar, K., Otero, N., Raffort, V., Roustan, Y., Schaap, M., Wind, P., and Colette, A. (2019). An evaluation of European nitrogen and sulfur wet deposition and their trends estimated by six chemistry transport models for the period 1990–2010, *Atmos. Chem. Phys.*, 19, 379–405, <https://doi.org/10.5194/acp-19-379-2019>.
- Ciarelli, G., Theobald, M. R., Vivanco, M. G., Beekmann, M., Aas, W., Andersson, C., Bergström, R., Manders-Groot, A., Couvidat, F., Mircea, M., Tsyro, S., Fagerli, H., Mar, K., Raffort, V., Roustan, Y., Pay, M.-T., Schaap, M., Kranenburg, R., Adani, M., Briganti, G., Cappelletti, A., D'Isidoro, M., Cuvelier, C., Cholakian, A., Bessagnet, B., Wind, P., and Colette, A. (2019). Trends of inorganic and organic aerosols and precursor gases in Europe: insights from the EURODELTA multi-model experiment over the 1990–2010 period, *Geosci. Model Dev.*, 12, 4923–4954, <https://doi.org/10.5194/gmd-12-4923-2019>.
- Antonio Piersanti, Mario Adani, Gino Briganti, Andrea Cappelletti, Luisella Ciancarella, Giuseppe Cremona, Massimo D'Isidoro, Carmine Lombardi, Francesca Pacchierotti, Felicità Russo, Marcello Spanò, Raffaella Uccelli, Lina Vitali (2018). Air quality modeling and inhalation health risk assessment for a new generation coal-fired power plant in Central Italy, *Science of The Total Environment*, 644, 884-898, ISSN 0048-9697, <https://doi.org/10.1016/j.scitotenv.2018.06.393>.
- Adani M., Mircea M., D'Isidoro M. and Gualtieri M., (2018) Impact of emissions, meteorology and grid resolution on changes of HMs and PAHs concentrations between 2005 and 2010 in Italy. *Aerosol and Air Quality Research*, 18:3165-3176, doi: 10.4209/aaqr.2017.08.0262.
- Vivanco, M. G., Theobald, M. R., García-Gómez, H., Garrido, J. L., Prank, M., Aas, W., Adani, M., Alyuz, U., Andersson, C., Bellasio, R., Bessagnet, B., Bianconi, R., Bieser, J., Brandt, J., Briganti, G., Cappelletti, A., Curci, G., Christensen, J. H., Colette, A., Couvidat, F., Cuvelier, C., D'Isidoro, M., Flemming, J., Fraser, A., Geels, C., Hansen, K. M., Hogrefe, C., Im, U., Jorba, O., Kitwiroon, N., Manders, A., Mircea, M., Otero, N., Pay, M.-T., Pozzoli, L., Solazzo, E., Tsyro, S., Unal, A., Wind, P., and Galmarini, S. (2018) Modeled deposition of nitrogen and sulfur in Europe estimated by 14 air quality model systems: evaluation, effects of changes in emissions and implications for habitat protection, *Atmos. Chem. Phys.*, 18, 10199–10218, <https://doi.org/10.5194/acp-18-10199-2018>.
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- Colette, A., Andersson, C., Manders, A., Mar, K., Mircea, M., Pay, M.-T., Raffort, V., Tsyro, S., Cuvelier, C., Adani, M., Bessagnet, B., Bergström, R., Briganti, G., Butler, T., Cappelletti, A., Couvidat, F., D'Isidoro, M., Doumbia, T., Fagerli, H., Granier, C., Heyes, C., Klimont, Z., Ojha, N., Otero, N., Schaap, M., Sindelarova, K., Stegehuis, A. I., Roustan, Y., Vautard, R., van Meijgaard, E., Vivanco, M. G., and Wind, P. (2017): EURODELTA-Trends, a multi-model experiment of air quality hindcast in Europe over 1990–2010, *Geosci. Model Dev.*, 10, 3255–3276, <https://doi.org/10.5194/gmd-10-3255-2017>
- Vitali L., Morabito A., Adani M, Assennato G., Ciancarella L., Cremona G., Giua R., Pastore T., Piersanti A., Righini G., Russo F., Spagnolo S., Tanzarella A., Tinarelli G., Zanini G, (2016) A Lagrangian modelling approach to assess the representativeness area of an industrial air quality monitoring station, *Atmospheric Pollution Research*, ISSN 1309-1042, <http://dx.doi.org/10.1016/j.apr.2016.06.002>.
- Mircea, M., Grigoros, G., D'Isidoro, M., Righini, G., Adani, M., Briganti, G., Ciancarella, L., Cappelletti, A., Calori, G., Cionni, I., Cremona, G., Finardi, S., Larsen, B.R., Pace, G., Perrino, C., Piersanti, A., Silibello, C., Vitali, L. and Zanini, G. (2016). Impact of Grid Resolution on Aerosol Predictions: A Case Study over Italy. *Aerosol Air Qual. Res.* 16: 1253-1267. <https://doi.org/10.4209/aaqr.2015.02.0058>

- Adani M, Mircea M., D'Isidoro M., Costa M.P., Silibello C. (2015) Heavy Metal Modelling Study over Italy: Effects of Grid Resolution, Lateral Boundary Conditions and Foreign Emissions on Air Concentration, Water, Air, & Soil Pollution, 226:46, doi: 10.1007/s11270-015-2324-7
- Pinardi N., Zavatarelli M, Adani M., Coppini G., Fratianni C., Oddo P., Simoncell S.i, Tonani M., Lyubartsev V., Dobricic S., Bonaduce A., (2015). Mediterranean Sea large-scale low-frequency ocean variability and water mass formation rates from 1987 to 2007: A retrospective analysis, *Progress in Oceanography*, Volume 132, 2015, Pages 318-332, ISSN 0079-6611, <https://doi.org/10.1016/j.pocean.2013.11.003>.
- Sannino G., Carillo A., Pisacane G., Adani, M., Palma M., Naranjo C., & Struglia, M. V. (2014). Mediterranean model response to enhanced resolution at Gibraltar and tidal forcing. *Black Sea/Mediterranean Environment*, 41.
- Gualdi, S., Somot, S., Li, L., Artale, V., Adani, M., Bellucci, A., Braun, A., Calmanti, S., Carillo, A., Dell'Aquila, A., Déqué, M., Dubois, C., Elizalde, A., Harzallah, A., Jacob, D., L'Hévéder, B., May, W., Oddo, P., Ruti, P., Sanna, A., Sannino, G., Scoccimarro, E., Sevault, F., & Navarra, A. (2013). The CIRCE Simulations: Regional Climate Change Projections with Realistic Representation of the Mediterranean Sea, *Bulletin of the American Meteorological Society*, 94(1), 65-81
- Adani M, Dobricic S, Pinardi N (2011). Quality Assessment of a 1985-2007 Mediterranean Sea Reanalysis. *Journal of Atmospheric and Ocean Technology*, vol. 28, p. 569-589, ISSN: 0739-0572, doi: 10.1175/2010JTECHO798.1
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- Albano PG, Sabelli B., Adani M., Pinardi N.,(2010). The thermophilous species *Echinolittorina punctata* as a new descriptor of tropicalization in the Mediterranean Sea- First data, *Biologia Marina Mediterranea*, 17,1,90-93
- Oddo, P., Adani, M., Pinardi, N., Fratianni, C., Tonani, M., and Pettenuzzo, D. (2009) A nested Atlantic-Mediterranean Sea general circulation model for operational forecasting, *Ocean Sci.*, 5, 461–473, <https://doi.org/10.5194/os-5-461-2009>.
- Dobricic, S., Pinardi, N., Adani, M., Tonani, M., Fratianni, C., Bonazzi, A., and Fernandez, V. (2007). Daily oceanographic analyses by Mediterranean Forecasting System at the basin scale, *Ocean Sci.*, 3, 149–157, <https://doi.org/10.5194/os-3-149-2007>.
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- Ulbrich U. et al. (2013) Past and Current Climate Changes in the Mediterranean Region. In: Navarra A., Tubiana L. (eds) *Regional Assessment of Climate Change in the Mediterranean*. *Advances in Global Change Research*, vol 50. Springer, Dordrecht. [https://doi.org/10.1007/978-94-007-5781-3\\_2](https://doi.org/10.1007/978-94-007-5781-3_2)
- Gualdi S. et al. (2013) Future Climate Projections. In: Navarra A., Tubiana L. (eds) *Regional Assessment of Climate Change in the Mediterranean*. *Advances in Global Change Research*, vol 50. Springer, Dordrecht. [https://doi.org/10.1007/978-94-007-5781-3\\_3](https://doi.org/10.1007/978-94-007-5781-3_3)
- Pinardi N., Fratianni C. and Adani M, (2008). Usage of real time observations in an operational ocean data assimilation system: the Mediterranean case, UNESCO Volume: "Real-Time Coastal Observing Systems for Marine Ecosystem Dynamics and Harmful Algal Blooms: Theory, Instrumentation and Modelling", M.Babin, C.S. Roesler and J.J.Cullen, Unesco Publ., pp 733-763.