STEFANO ALESSANDRINI

National Center for Atmospheric Research  
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EDUCATION

2010 Ph.D. in Environmental Sciences, University of Piemonte Orientale (Italy)

Introduction of chemical reactions into a Lagrangian stochastic particle model

Supervisor: Dr. Enrico Ferrero

1998 Master in Industrial Processes, Fondazione ISTUD Business School (Italy)

1996 Laurea (~M.S.) in Physics (Summa Cum Laude), Università of Milano (Italy)

Main courses for the specialization: geophysics, atmospheric physics and meteorology, environmental measurements

Supervisor: Dr. Domenico Anfossi

**WORKING EXPERIENCES**

2013– Project Scientist I/II/III, Deputy Director of the Weather Systems Assessment Program, National Center for Atmospheric Research (NCAR, USA)

* Probabilistic meteorological forecasting for solar and wind power applications
* Numerical weather simulations using the mesoscale models RAMS and WRF
* Post processing methods for wind power production
* Air quality probabilistic predictions through an analog ensemble
* Ensemble predictions of track and intensity for tropical cyclones through an analog ensemble
* Self-Organizing Map (SOM) classification of typical days of meteorological and dosage fields
* Long-range transport and dispersion Lagrangian simulations of hazardous materials

2001-2013 Scientist, Ricerca sul Sistema Energetico (RSE, Italy)

* Probabilistic meteorological forecasting for solar and wind power applications
* Post processing methods for wind power production
* Wind power resource assessment with mesoscale modelling
* Numerical weather simulations using the mesoscale model RAMS
* Introduction and testing of new turbulence closures in the mesoscale model RAMS
* Developments of the Lagrangian Dispersion Model SPRAY (introduction of a chemical scheme, parallelization with message passing interface (MPI), new plume rise algorithm, dry and wet deposition scheme)
* Air quality studies using SPRAY, ISC, CALPUFF models

2006-2013 Consultant (part-time), Food Agricultural Organization (FAO, Italy)

* Developing a rainfall estimation system for Africa using a multi sources approach (satellite, numerical weather prediction models, ground stations)
* Installing a satellite-based rainfall estimation system for the Sudan Meteorological Authority, Khartoum

1999-2008 Consultant (part time since 2001), Regional Meteorological Forecast Centre in Tuscany (Italy)

* Operational meteorological forecasting
* Setup (installation and tuning) of the mesoscale model RAMS for operational weather forecasting in Tuscany
* Software development to post process radar and meteorological data (using GRADS, SURFER, Visual basic 6.0)

1998-1999 Proposal manager, Philips Automation (Italy)

* Writing technical offers for selling environment measurement networks

1998-1998 Software Engineer, Progres S.p.a. (Italy)

1996-1997 Military service (Italy)

1995-1996 Graduate Fellow, Research Centre on Environment and Materials (Italy)

* Testing of different Lagrangian particle models of turbulent dispersion in the atmosphere

PUBLICATIONS

Peer-reviewed Journal Articles (published, in press, accepted, 68)

1. Ferrero, E.; Alessandrini, S.; Meech, S.; Rozoff, C. A 3D Lagrangian Stochastic Particle Model for the Concentration Variance Dispersion. Bulletin of Atmospheric Science and Technology 2022, 3, doi:10.1007/s42865-022-00045-0.
2. Alessandrini, S. Predicting Rare Events of Solar Power Production with the Analog Ensemble. Solar Energy 2022, 231, doi:10.1016/j.solener.2021.11.033.
3. Rozoff, C.M.; Alessandrini, S. A Comparison between Analog Ensemble and Convolutional Neural Network Empirical-Statistical Downscaling Techniques for Reconstructing High-Resolution Near-Surface Wind. Energies (Basel) 2022, 15, doi:10.3390/en15051718.
4. Golbazi, M.; Archer, C.L.; Alessandrini, S. Surface Impacts of Large Offshore Wind Farms. Environmental Research Letters 2022, 17, 064021, doi:10.1088/1748-9326/ac6e49.
5. Chapman, W.E.; Monache, L.D.; Alessandrini, S.; Subramanian, A.C.; Martin Ralph, F.; Xie, S.P.; Lerch, S.; Hayatbini, N. Probabilistic Predictions from Deterministic Atmospheric River Forecasts with Deep Learning. Mon Weather Rev 2022, 150, doi:10.1175/MWR-D-21-0106.1.
6. Hung, W.T.; Lu, C.H. (Sarah); Alessandrini, S.; Kumar, R.; Lin, C.A. The Impacts of Transported Wildfire Smoke Aerosols on Surface Air Quality in New York State: A Multi-Year Study Using Machine Learning. Atmos Environ 2021, 259, doi:10.1016/j.atmosenv.2021.118513.
7. Lewis, W.E.; Olander, T.L.; Velden, C.S.; Rozoff, C.; Alessandrini, S. Analog Ensemble Methods for Improving Satellite-Based Intensity Estimates of Tropical Cyclones. Atmosphere (Basel) 2021, 12, doi:10.3390/atmos12070830.
8. Bodini, N.; Hu, W.; Optis, M.; Cervone, G.; Alessandrini, S. Assessing Boundary Condition and Parametric Uncertainty in Numerical-Weather-Prediction-Modeled, Long-Term Offshore Wind Speed through Machine Learning and Analog Ensemble. Wind Energy Science 2021, 6, doi:10.5194/wes-6-1363-2021.
9. Raman, A.; Arellano, A.F.; Delle Monache, L.; Alessandrini, S.; Kumar, R. Exploring Analog-Based Schemes for Aerosol Optical Depth Forecasting with WRF-Chem. Atmos Environ 2021, 246, 118134, doi:10.1016/j.atmosenv.2020.118134.
10. Amicarelli, A.; Alessandrini, S.; Agate, G.; Ferrero, E.; Pirovano, G.; Tinarelli, G.L.; Trini Castelli, S. A Dry Deposition Scheme for Particulate Matter Coupled with a Well-Known Lagrangian Stochastic Model for Pollutant Dispersion. Environmental Fluid Mechanics 2021, 1–31, doi:10.1007/s10652-021-09780-y.
11. Meech, S.; Alessandrini, S.; Chapman, W.; Delle Monache, L. Post-Processing Rainfall in a High-Resolution Simulation of the 1994 Piedmont Flood. Bulletin of Atmospheric Science and Technology 2020, 1, 373–385, doi:10.1007/s42865-020-00028-z.
12. Hung, W.-T.; Lu, C.-H. (Sarah); Alessandrini, S.; Kumar, R.; Lin, C.-A. Estimation of PM2.5 Concentrations in New York State: Understanding the Influence of Vertical Mixing on Surface PM2.5 Using Machine Learning. Atmosphere (Basel) 2020, 11, 1303, doi:10.3390/atmos11121303.
13. Yang, D.; Alessandrini, S.; Antonanzas, J.; Antonanzas-Torres, F.; Badescu, V.; Beyer, H.G.; Blaga, R.; Boland, J.; Bright, J.M.; Coimbra, C.F.M.; et al. Verification of Deterministic Solar Forecasts. Solar Energy 2020, 210, 20–37, doi:10.1016/j.solener.2020.04.019.
14. Zardi, D.; Falocchi, M.; Giovannini, L.; Tirler, W.; Tomasi, E.; Antonacci, G.; Ferrero, E.; Alessandrini, S.; Jimenez, P.A.; Kosovic, B.; et al. The Bolzano Tracer Experiment (BTEX). Bull Am Meteorol Soc 2020, doi:10.1175/bams-d-19-0024.1.
15. Kumar, R.; Ghude, S.D.; Biswas, M.; Jena, C.; Alessandrini, S.; Debnath, S.; Kulkarni, S.; Sperati, S.; Soni, V.K.; Nanjundiah, R.S.; et al. Enhancing Accuracy of Air Quality and Temperature Forecasts During Paddy Crop Residue Burning Season in Delhi Via Chemical Data Assimilation. Journal of Geophysical Research: Atmospheres 2020, doi:10.1029/2020JD033019.
16. Kumar, R.; Alessandrini, S.; Hodzic, A.; Lee, J.A. A Novel Ensemble Design for Probabilistic Predictions of Fine Particulate Matter Over the Contiguous United States (CONUS). Journal of Geophysical Research: Atmospheres 2020, doi:10.1029/2020JD032554.
17. Alessandrini, S.; McCandless, T. The Schaake Shuffle Technique to Combine Solar and Wind Power Probabilistic Forecasting. Energies (Basel) 2020, 13, 2503, doi:10.3390/en13102503.
18. Haupt, S.E.; McCandless, T.C.; Dettling, S.; Alessandrini, S.; Lee, J.A.; Linden, S.; Petzke, W.; Brummet, T.; Nguyen, N.; Kosović, B.; et al. Combining Artificial Intelligence with Physics-Based Methods for Probabilistic Renewable Energy Forecasting. Energies (Basel) 2020, doi:10.3390/en13081979.
19. Kosovic, B.; Haupt, S.E.; Adriaansen, D.; Alessandrini, S.; Wiener, G.; Monache, L.D.; Liu, Y.; Linden, S.; Jensen, T.; Cheng, W.; et al. A Comprehensive Wind Power Forecasting System Integrating Artificial Intelligence and Numerical Weather Prediction. Energies (Basel) 2020, 16, doi:10.3390/en13061372.
20. Lewis, W.E.; Rozoff, C.; Alessandrini, S.; Delle Monache, L. Performance of the HWRF Rapid Intensification Analog Ensemble (HWRF RI-AnEn) during the 2017 and 2018 HFIP Real-Time Demonstrations. Weather Forecast 2020, 841–856, doi:10.1175/waf-d-19-0037.1.
21. Delle Monache, L.; Alessandrini, S.; Djalalova, I.; Wilczak, J.; Knievel, J.C.; Kumar, R. Improving Air Quality Predictions over the United States with an Analog Ensemble. Weather Forecast 2020, 1–49, doi:10.1175/waf-d-19-0148.1.
22. Cloud, K.A.; Reich, B.J.; Rozoff, C.M.; Alessandrini, S.; Lewis, W.E.; Delle Monache, L. A Feed Forward Neural Network Based on Model Output Statistics for Short-Term Hurricane Intensity Prediction. Weather Forecast 2019, doi:10.1175/waf-d-18-0173.1.
23. Alessandrini, S.; Sperati, S.; Delle Monache, L. Improving the Analog Ensemble Wind Speed Forecasts for Rare Events. Mon Weather Rev 2019, 147, 2677–2692, doi:10.1175/mwr-d-19-0006.1.
24. Ferrero, E.; Alessandrini, S.; Anderson, B.; Tomasi, E.; Jimenez, P.; Meech, S. Lagrangian Simulation of Smoke Plume from Fire and Validation Using Ground-Based Lidar and Aircraft Measurements. Atmos Environ 2019, doi:10.1016/j.atmosenv.2019.06.049.
25. Tomasi, E.; Giovannini, L.; Falocchi, M.; Antonacci, G.; Jiménez, P.A.; Kosovic, B.; Alessandrini, S.; Zardi, D.; Delle Monache, L.; Ferrero, E. Turbulence Parameterizations for Dispersion in Sub-Kilometer Horizontally Non-Homogeneous Flows. Atmos Res 2019, doi:10.1016/j.atmosres.2019.05.018.
26. Yang, D.; Alessandrini, S. An Ultra-Fast Way of Searching Weather Analogs for Renewable Energy Forecasting. Solar Energy 2019, 185, 255–261, doi:10.1016/j.solener.2019.03.068.
27. Kumar, R.; Delle Monache, L.; Bresch, J.; Saide, P.E.; Tang, Y.; Liu, Z.; da Silva, A.M.; Alessandrini, S.; Pfister, G.; Edwards, D.; et al. Toward Improving Short-Term Predictions of Fine Particulate Matter Over the United States Via Assimilation of Satellite Aerosol Optical Depth Retrievals. Journal of Geophysical Research: Atmospheres 2019, 124, 2753–2773, doi:10.1029/2018JD029009.
28. Kumar, R.; Lee, J.A.; Delle Monache, L.; Alessandrini, S. Effect of Meteorological Variability on Fine Particulate Matter Simulations Over the Contiguous United States. Journal of Geophysical Research: Atmospheres 2019, doi:10.1029/2018JD029637.
29. Yang, J.; Astitha, M.; Delle Monache, L.; Alessandrini, S. An Analog Technique to Improve Storm Wind Speed Prediction Using a Dual NWP Model Approach. Mon Weather Rev 2018, 146, 4057–4077, doi:10.1175/MWR-D-17-0198.1.
30. Alessandrini, S.; Monache, L.D.; Rozoff, C.M.; Lewis, W.E. Probabilistic Prediction of Tropical Cyclone Intensity with an Analog Ensemble. Mon Weather Rev 2018, 146, 1723–1744, doi:10.1175/MWR-D-17-0314.1.
31. Ferrero, E.; Alessandrini, S.; Vandenberghe, F. Assessment of Planetary-Boundary-Layer Schemes in the Weather Research and Forecasting Model Within and Above an Urban Canopy Layer. Boundary Layer Meteorol 2018, doi:10.1007/s10546-018-0349-3.
32. Cervone, G.; Clemente-Harding, L.; Alessandrini, S.; Delle Monache, L. Short-Term Photovoltaic Power Forecasting Using Artificial Neural Networks and an Analog Ensemble. Renew Energy 2017, 108, doi:10.1016/j.renene.2017.02.052.
33. Sperati, S.; Alessandrini, S.; Delle Monache, L. Gridded Probabilistic Weather Forecasts with an Analog Ensemble. Quarterly Journal of the Royal Meteorological Society 2017, 143, doi:10.1002/qj.3137.
34. Keller, J.D.; Monache, L.D.; Alessandrini, S. Statistical Downscaling of a High-Resolution Precipitation Reanalysis Using the Analog Ensemble Method. J Appl Meteorol Climatol 2017, 56, doi:10.1175/JAMC-D-16-0380.1.
35. Alessandrini, S.; Vandenberghe, F.; Hacker, J.P. Definition of Typical-Day Dispersion Patterns as a Consequence of a Hazardous Release. Int J Environ Pollut 2017, 62, doi:10.1504/IJEP.2017.089416.
36. Amicarelli, A.; Leuzzi, G.; Monti, P.; Alessandrini, S.; Ferrero, E. A Stochastic Lagrangian Micromixing Model for the Dispersion of Reactive Scalars in Turbulent Flows: Role of Concentration Fluctuations and Improvements to the Conserved Scalar Theory under Non-Homogeneous Conditions. Environmental Fluid Mechanics 2017, doi:10.1007/s10652-017-9516-1.
37. Ferrero, E.; Alessandrini, S.; Anfossi, D. Lagrangian Simulations of the Plume Rise in Strong Capping Inversion. Int J Environ Pollut 2017, 62, 184–199, doi:10.1504/IJEP.2017.089405.
38. Bisignano, A.; Mortarini, L.; Ferrero, E.; Alessandrini, S. Model Chain for Buoyant Plume Dispersion. Int J Environ Pollut 2017, 62, doi:10.1504/IJEP.2017.089406.
39. Jiménez, P.A.; Alessandrini, S.; Haupt, S.E.; Deng, A.; Kosovic, B.; Lee, J.A.; Monache, L.D. The Role of Unresolved Clouds on Short-Range Global Horizontal Irradiance Predictability. Mon Weather Rev 2016, 144, doi:10.1175/MWR-D-16-0104.1.
40. Davò, F.; Alessandrini, S.; Sperati, S.; Delle Monache, L.; Airoldi, D.; Vespucci, M.T. Post-Processing Techniques and Principal Component Analysis for Regional Wind Power and Solar Irradiance Forecasting. Solar Energy 2016, 134, doi:10.1016/j.solener.2016.04.049.
41. Sperati, S.; Alessandrini, S.; Delle Monache, L. An Application of the ECMWF Ensemble Prediction System for Short-Term Solar Power Forecasting. Solar Energy 2016, 133, doi:10.1016/j.solener.2016.04.016.
42. Ferrero, E.; Alessandrini, S.; Balanzino, A. Impact of the Electric Vehicles on the Air Pollution from a Highway. Appl Energy 2016, 169, doi:10.1016/j.apenergy.2016.01.098.
43. Alessandrini, S.; Delle Monache, L.; Sperati, S.; Cervone, G. An Analog Ensemble for Short-Term Probabilistic Solar Power Forecast. Appl Energy 2015, 157, doi:10.1016/j.apenergy.2015.08.011.
44. Sperati, S.; Alessandrini, S.; Pinson, P.; Kariniotakis, G. The “Weather Intelligence for Renewable Energies” Benchmarking Exercise on Short-Term Forecasting of Wind and Solar Power Generation. Energies (Basel) 2015, 8, doi:10.3390/en8099594.
45. Junk, C.; Monache, L.D.; Alessandrini, S. Analog-Based Ensemble Model Output Statistics. Mon Weather Rev 2015, 143, 2909–2917, doi:10.1175/MWR-D-15-0095.1.
46. Michiorri, A.; Nguyen, H.M.; Alessandrini, S.; Bremnes, J.B.; Dierer, S.; Ferrero, E.; Nygaard, B.E.; Pinson, P.; Thomaidis, N.; Uski, S. Forecasting for Dynamic Line Rating. Renewable and Sustainable Energy Reviews 2015, 52, 1713–1730, doi:10.1016/j.rser.2015.07.134.
47. Alessandrini, S.; Delle Monache, L.; Sperati, S.; Nissen, J.N. A Novel Application of an Analog Ensemble for Short-Term Wind Power Forecasting. Renew Energy 2015, 76, doi:10.1016/j.renene.2014.11.061.
48. Dinku, T.; Alessandrini, S.; Evangelisti, M.; Rojas, O. A Description and Evaluation of FAO Satellite Rainfall Estimation Algorithm. Atmos Res 2015, 163, doi:10.1016/j.atmosres.2015.01.020.
49. Junk, C.; Monache, L.D.; Alessandrini, S.; Cervone, G.; Von Bremen, L. Predictor-Weighting Strategies for Probabilistic Wind Power Forecasting with an Analog Ensemble. Meteorologische Zeitschrift 2015, 24, 361–379, doi:10.1127/metz/2015/0659.
50. Alessandrini, S.; Davò, F.; Sperati, S.; Benini, M.; Delle Monache, L. Comparison of the Economic Impact of Different Wind Power Forecast Systems for Producers. Advances in Science and Research 2014, 11, 49–53, doi:10.5194/asr-11-49-2014.
51. Bisignano, A.; Mortarini, L.; Ferrero, E.; Alessandrini, S. Analytical Offline Approach for Concentration Fluctuations and Higher Order Concentration Moments. Int J Environ Pollut 2014, 55, 58–66, doi:10.1504/IJEP.2014.065905.
52. Alessandrini, S.; Sperati, S.; Pinson, P. A Comparison between the ECMWF and COSMO Ensemble Prediction Systems Applied to Short-Term Wind Power Forecasting on Real Data. Appl Energy 2013, 107, 271–280, doi:10.1016/j.apenergy.2013.02.041.
53. Alessandrini, S.; Ferrero, E.; Anfossi, D. A New Lagrangian Method for Modelling the Buoyant Plume Rise. Atmos Environ 2013, 77, doi:10.1016/j.atmosenv.2013.04.070.
54. Ferrero, E.; Mortarini, L.; Alessandrini, S.; Lacagnina, C. Application of a Bivariate Gamma Distribution for a Chemically Reacting Plume in the Atmosphere. Boundary Layer Meteorol 2013, 147, doi:10.1007/s10546-012-9775-9.
55. Ferrero, E.; Mortarini, L.; Alessandrini, S.; Lacagnina, C. A Fluctuating Plume Model for Pollutants Dispersion with Chemical Reactions. Int J Environ Pollut 2012, 48, doi:10.1504/IJEP.2012.049646.
56. Alessandrini, S.; Balanzino, A.; Ferrero, E.; Riva, M. Lagrangian Modelling Evaluation of the NOx Pollution Reduction Due to Electric Vehicles Introduction. Int J Environ Pollut 2012, 50, doi:10.1504/IJEP.2012.051193.
57. Alessandrini, S.; Pinson, P.; Hagedorn, R.; Decimi, G.; Sperati, S. An Application of Ensemble/Multi Model Approach for Wind Power Production Forecasting. Adv. Sci. Res 2011, 6, 2010, doi:10.5194/asr-6-35-2011.
58. Alessandrini, S.; Ferrero, E. A Lagrangian Particle Model with Chemical Reactions: Application in Real Atmosphere. Int J Environ Pollut 2011, 47, 97, doi:10.1504/IJEP.2011.047350.
59. Balanzino, A.; Ferrero, E.; Pirovano, G.; Pertot, C.; Causà, M.; Alessandrini, S.; Costa, M.P. Annual Simulation of Secondary Pollution over Northern Italy. Int J Environ Pollut 2011, 45, doi:10.1504/IJEP.2011.040280.
60. Alessandrini, S.; Ferrero, E.; Belfiore, G. A Lagrangian Dispersion Model with Chemical Reactions. Int J Environ Pollut 2011, 44, doi:10.1504/IJEP.2011.038417.
61. Alessandrini, S.; Ferrero, E.; Pertot, C.; Castelli, S.T.; Orlandi, E. Turbulence Closure in Atmospheric Circulation Model and Its Influence on the Dispersion. Int J Environ Pollut 2010, 40, 36–48, doi:10.1504/IJEP.2010.030881.
62. Alessandrini, S.; Ferrero, E. A Hybrid Lagrangian-Eulerian Particle Model for Reacting Pollutant Dispersion in Non-Homogeneous Non-Isotropic Turbulence. Physica A: Statistical Mechanics and its Applications 2009, 388, doi:10.1016/j.physa.2008.12.015.
63. Pirovano, G.; Coll, I.; Bedogni, M.; Alessandrini, S.; Costa, M.P.; Gabusi, V.; Lasry, F.; Menut, L.; Vautard, R. On the Influence of Meteorological Input on Photochemical Modelling of a Severe Episode over a Coastal Area. Atmos Environ 2007, 41, doi:10.1016/j.atmosenv.2007.04.011.
64. Anfossi, D.; Alessandrini, S.; Trini Castelli, S.; Ferrero, E.; Oettl, D.; Degrazia, G. Tracer Dispersion Simulation in Low Wind Speed Conditions with a New 2D Langevin Equation System. Atmos Environ 2006, 40, doi:10.1016/j.atmosenv.2006.05.081.
65. Alessandrini, S.; Ferrero, E.; Pertot, C.; Orlandi, E. Comparison of Different Dispersion Models with Tracer Experiment. Nuovo Cimento della Societa Italiana di Fisica C 2005, 28, doi:10.1393/ncc/i2005-10187-0.
66. Alessandrini, S.; Ferrero, E.; Castelli, S.T.; Anfossi, D. Influence of Turbulence Closure on the Simulation of Flow and Dispersion in Complex Terrain. Int J Environ Pollut 2005, 24, doi:10.1504/IJEP.2005.007391.
67. Ferrero, E.; Anfossi, D.; Brusasca, G.; Tinarelli, G.; Alessandrini, S.; Trini Castelli, S. Simulation of Atmospheric Dispersion in the Convective Boundary Layer: Comparison between Two Lagrangian Particle Models. Int J Environ Pollut 1997, 8.
68. Anfossi, D.; Ferrero, E.; Tinarelli, G.; Alessandrini, S. A Simplified Version of the Correct Boundary Conditions for Skewed Turbulence in Lagrangian Particle Models. Atmos Environ 1997, 31, doi:10.1016/1352-2310(96)00140-9.

Chapter in book (2)

1. Alessandrini, S., Sperati, S. (2017). Characterization of forecast errors and benchmarking of renewable energy forecasts. In Renewable Energy Forecasting (pp. 235-256).
2. Delle Monache, L., Alessandrini, S. (2014). Chapter 12-probabilistic Wind and Solar Power Predictions. Renewable Energy Integration, Academic Press, Boston, 149e158.

GRANTS [as Principal Investigator (PI), Co-PI, Task Leader only]

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| --- | --- | --- | --- | --- |
| **Period** | **My Role** | **Title** | **Agency** | **Amount or Full-time Equivalent (FTE)** |
| 2021-2023 | PI | Post-Processing of air quality forecasts | NOAA | USD 600 000 |
| 2019– 2022 | PI | The Global Climatological Analysis Tool (FY2019) | NGIC  National Ground Intelligence Center | USD 1 005 000 |
| 2018 – 2018 | PI | Probabilistic Wind Power Predictions with an Analog Ensemble | VESTAS  Private funding | USD 140 000 |
| 2017 – 2018 | PI | The Global Climatological Analysis Tool (FY2017) | NGIC  National Ground Intelligence Center | USD 311 392 |
| 2017 – 2018 | Co-PI | The analog ensemble for tropical cyclone intensity, track, and structure) | NOAA HFIP  U.S. National Oceanic and Atmospheric Administration, Hurricane Forecast Improvement Program | USD 175 000 |
| 2017 – 2017 | Co-PI | Applications of the WRF-Chem model to the reanalysis of weather events at the Nevada Test Site and the Pacific Proving Grounds | IDA  Institute for Defense Analysis | USD 20 000 |
| 2016 – 2017 | PI | Gridded Probabilistic Predictions with an Analog Ensemble Over Beijing Urban Area | IUM  Institute of Urban Meteorology, China Meteorological Administration | USD 50 000 |
| 2016 – 2017 | PI | The Global Climatological Analysis Tool (FY2016) | NGIC  National Ground Intelligence Center | USD 320 114 |
| 2015 – 2015 | co-PI | Chemical data assimilation and analog-based uncertainty quantification to improve decision-making in public health and air quality | NASA  U.S. National Aeronautics and Space Administration | USD 1 266 168 |
| 2014 – 2016 | co-PI | Probabilistic predictions of hurricane intensity with an analog ensemble | NOAA HFIP  U.S. National Oceanic and Atmospheric Administration, Hurricane Forecast Improvement Program | USD 195 000 |
| 2012 – 2013 | Task  Lead | Impact of power production by biomass on air quality | Italian Ministry of Economical Development  Ricerca di Sistema | FTE 3 |
| 2012 – 2013 | Task  Lead | Probabilistic wind and solar power forecasting with an analog ensemble | Italian Ministry of Economical Development  Ricerca di Sistema | FTE 3 |
| 2012 – 2013 | Task  Lead | Real time operational wind power forecasting on 9 Italian wind farms | ENEL SpA  Private funding | FTE 0.5 |
| 2009 – 2011 | Task  Lead | Operational forecasting over Italian wind farms and potential use of ensemble forecasting | Italian Ministry of Economical Development  Ricerca di Sistema | FTE 5 |
| 2009 – 2011 | Task  Lead | Resource assessment of Italian off-shore wind power with a limited area meteorological model | Italian Ministry of Economical Development  Ricerca di Sistema | FTE 4 |
| 2009 – 2011 | Task  Lead | Impact on air quality of electric vehicles introduction in the Italian car fleet | Italian Ministry of Economical Development  Ricerca di Sistema | FTE 3 |
| 2006 – 2008 | Task  Lead | Improvement of the Italian wind atlas with a limited area meteorological model | Italian Ministry of Economical Development  Ricerca di Sistema | FTE 4 |
| 2006 – 2008 | Task  Lead | Impact of market rules and environmental constrains over the Italian energy production system | Italian Ministry of Economical Development  Ricerca di Sistema | FTE 4 |
| 2006 – 2008 | Task  Lead | Development and application of methods for assessing the impact of micro pollutants on air quality over Italy | Italian Ministry of Economical Development  Ricerca di Sistema | FTE 4 |
| 2003 – 2005 | Task  Lead | Development of the model MIRS as an interface between the diffusion model Spray and the meteorological model RAMS | Italian Ministry of Economical Development  Ricerca di Sistema | FTE 3 |
| 2003 – 2005 | Task  Lead | Application and comparison between the diffusion models SPRAY and CALPUFF | Italian Ministry of Economical Development  Ricerca di Sistema | FTE 4 |

Invited Talks (12)

1. **S Alessandrini**, “Subseasonal to seasonal forecasts of Fire Potential Index”, Milan (Italy), October 2022
2. **S Alessandrini**, “Subseasonal to seasonal forecasts of Fire Potential Index”, NOAA (US), remotely June 2022
3. **S Alessandrini**, “High-resolution simulations of the 1994 flood event”, Alessandria (Italy), October 2019
4. **S Alessandrini**, “Gridded Probabilistic Forecasts of Weather Parameters with an Analog Ensemble”, Penn State University (State College, PA), November 2016.
5. **S Alessandrini**, “Gridded Probabilistic Forecasts of Weather Parameters with an Analog Ensemble”, ECMWF, Reading (United Kingdom), May 2016.
6. **S Alessandrini**, S Sperati, P Pinson, G Kariniotakis, “Presentation of the results of the WIRE exercise”, WIRE Final Workshop, Paris (France), 2014.
7. **S Alessandrini**, S Sperati, P Pinson, G Kariniotakis, “Presentation of the results of the WIRE exercise”, EWEA Wind Power Forecasting Workshop, Rotterdam (Nederland), 2013.
8. **S Alessandrini**, “Forecasting Techniques: State of the Art”, IEA, Topical Expert meeting on wind power forecasting, Milan (Italy), 2013.
9. **S Alessandrini**, D Benini, “Methods to improve the wind energy production schedules”, seminar, ANIE, Milan (Italy), 2013.
10. **S Alessandrini**, M Evangelisti, ”FAO RFE the FAO African Rainfall Estimate”, the first conference of ministers for meteorology in Africa, Nairobi (Kenya), 2010.
11. **S Alessandrini**, “A wind power forecast system in complex topographic conditions”, invited lecture, ECMWF, Reading (United Kingdom), 2009.
12. **S Alessandrini**, M Evangelisti, ”FAO RFE the FAO African Rainfall Estimate”, 1st Workshop on Rainfall Estimates for Crop Monitoring and Food Security, Ispra (Italy), 2008.

**TUTORING AND SUPERVISION**

2017- Supervisor of four scientists at RAL/NCAR

2017 Co-supervision of Elena Tomasi, PhD student from the University of Trento (Italy).

2016 Co-supervision of Jaemo Yang, PhD student at the University of Connecticut

2016 Co-supervision of Aishwarya Raman, PhD student from the University of Arizona.

2016 Co-supervision of Laura Harding, PhD student from the Penn State University.

2014 Tutor of the Master degree thesis “Comparison of different downscaling techniques for wind power forecast and resource assessment “, Student: Michela Lavelli, Università Statale di Milano Bicocca

2011 Tutor of the Master degree thesis “Numerical model application for forecasting and assessment of wind power production“, Student: Simone Sperati, Università Statale di Milano Bicocca

2010 Tutor of the Master degree thesis “Lagrangian atmospheric dispersion model with chemical reaction”, Student: Carlo Lacagnina, Università degli studi di Torino

2004 Tutor of the Master degree thesis “Study of atmospheric turbulence closure in a meteorological model and their influence on the dispersion processes“, Student: Emiliano Orlandi, Università degli studi di Milano

**AWARDS**

2020 RAL-Best publication award, Alessandrini et al. 2015, *Applied Energy*

2016 RAL-Scientific and technical advanced award for Sun4Cast Solar Power Forecasting System

2015 Early Career Scientist Assembly (ECSA) visitor fund award ($3000 for a 2-month visit)

2015 ECSA travel fund award ($1500 to attend Solar Power International conference in Anaheim, CA)

2014 CO-LABS Governor's Award for High Impact Research, Sustainability Category

**PROFESSIONAL ACTIVITIES**

* Member of AMS Committee on Meteorological Aspects of Air Pollution
* Invited teacher at the summer school: Renewable Energies: short-term generation forecasting and financial implications, organized by European Cooperation in Science and Technology (COST) action Weather Intelligence for Renewables, (WIRE), Toulouse, France, 2014
* Invited teacher at the Sudan Meteorological Authority: Rainfall Estimate method from satellite observations, 2011, Khartoum, Sudan.
* Peer Reviewer Scientific Journals: Journal of Applied Meteorology and Climatology, Applied Energy, the Canadian Journal of Chemical Engineering, International Journal of Electrical Power and Energy Systems, Journal of Engineering and Technology, Atmospheric Chemistry and Physics, Atmospheric Environment, Solar Energy, Monthly Weather Review, Wind Energy
* Scientific Committees: ICEM, Energy and Meteorology conference, Toulouse 2013, Boulder 2015, Bari 2017, Shanghai 2018.
* Miscellaneous: Italian Committee Member of COST Action Weather Intelligence for Renewables, organizing the benchmark exercise on wind and solar power forecasting

TECHNICAL SKILLS

Models

* Numerical Weather Prediction: RAMS (9 years), CALMET (5 years), Minerve (3 years), WRF (4 years)
* Transport and Dispersion Models: SPRAY (20 years), CALPUFF (4 years), ISC (3 years)

Software

* Fortran 77/90 (20 years), R (8 years), Perl (8 years), Visual Basic (8 years), Grads (14 years), Surfer (14 years), SQL database (2 years)

**CONFERENCES (most relevant 80, speaker in bold)**

1. **S Alessandrini, “**Testing of a Fast Source Term Parameter Estimation Algorithm for Atmospheric Transport and Dispersion Applications”, **International Technical Meeting on Air Pollution Modelling and its Application, Hamburg, Germany, 2019**
2. **R Kumar, J. Lee, S. Alessandrini, and L. Delle Monache (2018), A novel ensemble design for fine particulate matter probabilistic predictions and quantification of their uncertainty, AGU Fall meeting, 2018, Washington D.C.**
3. **R. Kumar, L. Delle Monache, S. Alessandrini et al. (2018), Improving short-term predictions of fine particulate matter over the United States using the chemical data assimilation, IWAQFR, Nov 2018, Boulder, CO.**
4. **S Alessandrini, R. Kumar, J. Lee, and L. Delle Monache (2018), Effect of meteorological variability on fine particulate matter predictions over the United States, IWAQFR, Nov 2018, Boulder, CO.**
5. **S Alessandrini, L. Delle Monache, and S Haupt. Improving the Analog Ensemble Wind and Solar Power Forecasts for Rare Events, EMS Annual meeting, Sep. 2018, Budapest, Hungary**
6. **C. Rozoff and S. Alessandrini. An analog ensemble method for downscaling. EMS Annual Meeting, Sep. 2018, Budapest, Hungary**
7. **S Alessandrini, R. Kumar, J. Lee, and L. Delle Monache (2019), Effect of meteorological variability on fine particulate matter predictions over the United States, EGU, Apr 2019, Vienna, Austria.**
8. **S Alessandrini, C. Rozoff. An analog ensemble method for downscaling. GMU Annual meeting, Jun. 2018, Fairfax,VA**
9. **S Alessandrini, An overview of the analog ensemble method, AISAM, First National Conference, Sep 2018, Bologna, Italy**
10. **S Alessandrini, C Rozoff, L Delle Monache, W E Lewis, “Tropical cyclone track prediction with an analog ensemble”,** 33rd Conference on Hurricanes and Tropical Meteorology, Ponte Vedra, US, 2018
11. **S Alessandrini, L Delle Monache, “Improving the analog ensemble wind forecast for rare events”, AMS Annual Meeting, Austin, US, 2018**
12. **S Alessandrini, “Improving the analog ensemble wind power forecast for rare events”, ICEM (International Conference on Energy & Meteorology), Bari, Italy, 2017**
13. **S Alessandrini, “Simulation of the Fukushima accident: sensitivity tests on turbulence parameters in the upper troposphere” 18th International Conference on Harmonization within Atmospheric Dispersion Modelling for Regulatory Purposes, Bologna, Italy, 2017**
14. **S Alessandrini, F Vandenberghe, W Wu, R J Babarsky, “Typical-day dispersion patterns as a consequence of the chlorine release at the Jack Rabbit II field experiment”, 21th Annual George Mason University (GMU) Transport & Dispersion modeling conference, Fairfax, US, 2017**
15. **S Alessandrini, L Delle Monache, C M Rozoff, and W E Lewis, “Probabilistic Prediction of Tropical Cyclone Rapid Intensification with an Analog Ensemble”, AMS Annual Meeting, Seattle, US, 2017**
16. **L Delle Monache, S Alessandrini, I V Djalalova, and J Wilczak, “Probabilistic Predictions of PM2.5 with an Analog Ensemble”, AMS Annual Meeting, Seattle, US, 2017 (poster presentation)**
17. **R Kumar, L Delle Monache, S Alessandrini, P E Saide, J Bresch, Z Liu, G Pfister, D P Edwards, I V Djalalova, B Baker, P Lee, Y Tang, and J Wilczak, “Improving Short-Term Air Quality Predictions over the U.S. Using Chemical Data Assimilation”, AMS Annual meeting, Seattle, US, 2017**
18. **J Yang, M Astitha, L D Monache, and S Alessandrini, “Improvement of Wind Speed Prediction Using Statistical and Analog Techniques for NE U.S”, AMS Annual Meeting, Seattle, US, 2017 (poster presentation)**
19. **S E Haupt, B Kosovic, T Jensen, J Cowie, G Wiener, S Linden, L Delle Monache, and S Alessandrini, “Big Data and Machine Learning for Weather Forecasts: Applications to Forecasting Solar Power for Utility Operations”, AMS Annual meeting, Seattle, US, 2017**
20. **C M Rozoff, L Delle Monache, S Alessandrini, and W E Lewis, “Probabilistic Prediction of Tropical Cyclone Track, Intensity, and Structure with an Analog Ensemble”, HFIP Annual Review Meeting, Miami, 2017**
21. **S Alessandrini, F Vandenberghe, W Wu, R J Babarsky, “Typical-day dispersion patterns as a consequence of the chlorine release at the Jack Rabbit II field experiment”, International Technical Meeting on Air Pollution Modelling and its Application, Crete, Greece, 2016**
22. **J Yang**, M Astitha, L Delle Monache, S Alessandrini, “Analog ensemble and Bayesian regression techniques to improve the wind speed prediction during extreme storms in the NE US”, AGU Fall Meeting, San Francisco, US, 2016
23. **R Kumar, Raman A, L Delle Monache, S Alessandrini, WY Cheng, B Gaubert, AF Arellano, “A novel method to improve MODIS AOD retrievals in cloudy pixels using an analog ensemble approach”,** AGU Fall Meeting, San Francisco, US, 2016
24. **G Cervone**, L Clemente-Harding, S Alessandrini, L Delle Monache, “Using NCAR Yellowstone for PhotoVoltaic Power Forecasts with Artificial Neural Networks and an Analog Ensemble”. AGU Fall Meeting, San Francisco, US, 2016
25. **L Clemente-Harding**, G Cervone, L Delle Monache, SE Haupt, S Alessandrini, “Analog Ensemble (AnEn): Optimal Predictor Weighting and Exploitation of Spatial Characteristics in AnEn Generation”. AGU Fall Meeting, San Francisco, US, 2016
26. **S Alessandrini, F Vandenberghe, Y Wu, W Wu, R J Babarsky, “New features of the Global Climatological Analysis Tool (GCAT)”, 20th Annual George Mason University (GMU) Transport & Dispersion modeling conference, Fairfax, US, 2016**
27. **E Tomasi, L Giovannini, M Falocchi, D Zardi, G Antonacci, E Ferrero, A Bisignano, S Alessandrini, L Mortarini, “Dispersion modeling over complex terrain in the Bolzano basin (IT): preliminary CALPUFF results with WRF meteorological input fields”, International Technical Meeting on Air Pollution Modelling and its Application, Crete, Greece, 2016 (poster presentation)**
28. **E Ferrero, S Alessandrini, F Vandenberghe, “Comparison of WRF PBL Models in low wind speed conditions with measured data”, International Technical Meeting on Air Pollution Modelling and its Application, Crete, Greece, 2016**
29. **S Alessandrini, “New Features of the Global Climatological Analysis Tool (GCAT)”, 20th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, US, 2016**
30. **S Alessandrini, “An application of the Schaake Shuffle technique to generate space-time consistent AQ predictions”, 17th International Conference on Harmonization within Atmospheric Dispersion Modelling for Regulatory Purposes, Budapest, Hungary, 2016**
31. **E Ferrero, S Alessandrini, “**Lagrangian simulations of the plume rise in strong capping inversion”**, 17th International Conference on Harmonization within Atmospheric Dispersion Modelling for Regulatory Purposes, Budapest, Hungary, 2016**
32. **L Delle Monache**, S Alessandrini, “Probabilistic Prediction of Tropical Cyclone Intensification with an Analog Ensemble, 32nd Conference on Hurricanes and Tropical Meteorology”, Puerto Rico, 2016
33. **E Ferrero, S Alessandrini, “WRF PBL model comparison against data measured in an urban environment”, 10th International Conference on Air Quality, Milano, Italy, 2016**
34. **S Alessandrini, “An Analog-Based method to generate air quality forecast over the US”, 10th International Conference on Air Quality, Milano, Italy, 2016**
35. **S Alessandrini, “Probabilistic Prediction of Hurricane Intensity with an Analog Ensemble”, AMS Annual meeting, New Orleans, US, 2016, (poster presentation)**
36. **L Delle Monache, S Alessandrini, “**Gridded Probabilistic Forecasts of Weather Parameters with an Analog Ensemble”**, AMS Annual meeting, New Orleans, US, 2016**
37. **P Jimenez, S Alessandrini, “**Accounting for the Effects of Unresolved Clouds in the Shortwave Irradiance Forecast of the WRF-Solar Model to Improve Solar Power Forecasts”**, AMS Annual meeting, New Orleans, US, 2016**
38. **C Rozoff**, S Alessandrini, “Probabilistic Prediction of Tropical Cyclone Intensification with an Analog Ensemble”, HFP annual meeting, Miami, FL, 2015
39. **S Alessandrini, “Solar Forecasting with an Analog Ensemble”, Solar Power International, Anaheim, US, 2015**
40. **R Cabell, L Delle Monache, S Alessandrini, L Rodriguez, “A Self-Organizing Map-Based Approach to Generating Reduced-Size, Statistically Similar Climate Datasets”,** AGU Fall Meeting, San Francisco, US, 2015
41. **JD Keller**, L Delle Monache, S Alessandrini, “Downscaling of reanalysis precipitation data using the analog ensemble method for global and regional reanalysis”, AGU Fall Meeting, San Francisco, US, 2015
42. **S Alessandrini, “Verification of a Plume Rise Model Against Laboratory Simulations of a Highly Buoyant Plume”, 19th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, US, 2015**
43. **S Alessandrini, “Definition of typical-day dispersion patterns as a consequence of a hazardous release”, 19th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, US, 2015**
44. **S Alessandrini, A probabilistic load forecast system based on the analog ensemble method, ICEM (International Conference on Energy & Meteorology), Boulder, CO, 2015**
45. **L Delle Monache, S Alessandrini, “The Analog Ensemble for renewable energy applications: an overview,” ICEM (International Conference on Energy & Meteorology), Boulder, US, 2015**
46. **S Alessandrini, “Definition of typical-day dispersion patterns as a consequence of a hazardous release”, ITM (International Technical Meeting on air pollution modelling), Montpellier, France, 2015, (poster presentation)**
47. **S Alessandrini, L Delle Monache, S Haupt, “An Application of an Analog Ensemble for Short-Term Solar Power Forecasting, AMS annual meeting”, Phoenix, US, 2015**
48. **C Junk, L Delle Monache, S Alessandrini, L von Bremen, S Späth, “Optimizing the analog ensemble for probabilistic wind power forecasting at four on and offshore wind farms”, European Meteorological Society Annual Meeting, Prague, Czech Republic, 2014**
49. **L Delle Monache, S Alessandrini, S Haupt, S Sperati, F Davo’, J Niessen, “On the value of uncertainty quantification and probabilistic wind power predictions”, EWEA annual event, Barcelona, Spain, 2014 (poster presentation)**
50. **F Davo’, S Alessandrini, S Sperati, “An Application of PCA based approach to large area for wind power forecast”, EWEA’s Wind Power Forecasting Technology Workshop, Rotterdam, Nederland, 2013 (poster presentation)**
51. **S Alessandrini**, F Davo’, S Sperati, M Benini, L Delle Monache, “Comparison of the economic impact of different wind power forecast systems for producers”, EMS Annual meeting, Reading, United Kingdom, 2013
52. **S Sperati, S Alessandrini, D Cirio, A Pitto, “An application and verification of ensemble forecasting on wind power to assess operational risk indicators in power grids”, ICEM Energy and Meteorology conference, Toulouse, France, 2013**
53. **E Ferrero, S Alessandrini, A Balanzino, G Riva, “Does electric vehicles introduction in the car fleet improve air quality”, 15th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes, Madrid, Spain, 2013**
54. **S Alessandrini, L Delle Monache, S Sperati, “Application of “analog” method for wind power ensemble forecasting”,** EWEA Annual Event, Vien, Austria (poster presentation), 2013
55. **S Alessandrini**, S Sperati, P Pinson, “The use of different ensemble forecasting systems for wind power prediction on a real case in the South of Italy”, EWEA Annual Event, Copenhagen, Denmark, 2012 (poster presentation).
56. **E Ferrero**, D Anfossi, S Alessandrini, L Mortarini, “Beyond the Limits of the Lagrangian Particle Models, From the Chemistry to the Entrainment”, AGU Chapman Conference, Lagrangian Modelling of the Atmosphere, Grindelwald, Switzerland, 2011
57. **S Alessandrini**, A Balanzino, E Ferrero, M Riva, “Lagrangian modelling evaluation of the NOx pollution reduction due to electric vehicles introduction”, 13th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes, Kos, Greece, 2011
58. **S Alessandrini**, S Sperati, P Pinson, “The influence of the new ECMWF Ensemble Prediction System resolution on wind power forecast accuracy and uncertainty estimation”, EMS Annual meeting, Berlin, Germany, 2011
59. **S Alessandrini**, D Ronzio, G Decimi, S Sperati, “The RSE wind and solar forecast system”, ES1002 Start Up COST Action, Workshop, Nice, France, 2011
60. **S Alessandrini**, G Decimi, E Lembo, L Serri, “Assessment of an off-shore site's wind power energy using meteorogical models and measured data”, EWEA (European Wind Energy Association) Brussels, Belgium, 2011, (poster presentation)
61. **S Alessandrini**, P Pinson, R Hagedorn, G Decimi, S Sperati, “An application of ensemble/multi model approach for wind power production forecasting”, EMS annual meeting, Zurich, Switzerland, 2010
62. **S Alessandrini**, D Anfossi, E Ferrero, “A New Method for Buoyant Plume Rise Computation in Lagrangian Particle Models”, ITM - NATO/SPS International Technical Meeting on Air Pollution Modelling and its Application, Torino, Italy, 2010
63. **S Alessandrini**, G Decimi, D Ronzio, P Bonelli, U De Angelis, G M Cirillo, F Fioretti, “Comparison within different downscaling technique in a wind power forecast system”, EWEC (European Wind Energy Conference), Warsaw, Poland, 2010 (poster presentation)
64. **S Alessandrini**, G Decimi, L Palmieri, E Ferrero, “A wind power forecast system in complex topographic conditions”, EWEC (European Wind Energy Conference) conference proceedings, Mareseille, France, 2009 (poster presentation)
65. **S Alessandrini**, G Decimi, E Ferrero, “Application of a meteorological model to the wind power forecast”, SIF (Società italiana di Fisica), Genova, Italy 2008, oral presentation
66. **J Grieser**, S Alessandrini, M Evangelisti, R Gommes, M Bernardi, J Ticheler, S Cofield, “The FAO African Rainfall Estimate FAO RFE”, conference abstract EGU general assembly, Vien, Austria, 2007 (poster presentation)
67. **S Alessandrini**, E Ferrero, “An application of a Lagrangian particle model with chemical reactions to power plant pollution dispersion in complex terrain”, ITM - NATO/SPS International Technical Meeting on Air Pollution Modelling and its Application, San Francisco (CA), 2009
68. **S Alessandrini**, E Ferrero, “A Lagrangian particle model with chemical reactions: application in real atmosphere”, 12th Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes, Cavtat, Croatia, 2008
69. **S Alessandrini**, G Decimi, "Assessment of an off-shore site wind power production using a meteorological model", Workshop EWEC 2007, Milano, 2007 (poster presentation)
70. **S Alessandrini**, E Ferrero, G Belfiore, "A Lagrangian reactive model", 11th International Conference on Harmonisation within Atmospheric Dispersion Modelling for Regulatory Purposes, Cambridge, United Kingdom, 2007
71. S Alessandrini, G Pirovano, A Balanzino, M Causà, **E Ferrero**, C Pertot, M Costa, "Intercomparison between national and regional scale photochemical pollution simulations over Northern Italy", 6th International Conference on Urban Air Quality, Cyprus, 2007
72. **S Alessandrini**, S Trini Castelli, E Ferrero, "An application of RAMS to power plant pollution forecast in complex terrain", IRAMS Users, Ubatuba, Brazil, 2006
73. S Alessandrini, G Pirovano, C Pertot, P Bossi, G. Maffeis, **M Costa,** "PM10 Long term modelling evaluation over Italy”, PM2006 - II convegno nazionale sul particolato atmosferico, Firenze, Italy, 2006
74. S Alessandrini, G Pirovano, M Costa, **B Bessagnet**, E Bossi, G Maffeis, C Pertot, R Vautard, "Long term evaluation of secondary atmospheric pollution over Italy", ITM - NATO/SPS, International meeting on Air pollution modelling and its application, Leipzig, Germany, 2006
75. S Alessandrini, G Pirovano, **M Bedogni**, I Coll, F Lasry, L Menut, R Vautard, M P Costa, V Gabusi, " Application and sensitivity analysis of CAMx and Chimere air quality models in a coastal area", ITM - NATO/SPS, International meeting on Air pollution modelling and its application, Leipzig, Germany, 2006
76. S Alessandrini, E Ferrero, **S Trini Castelli**, D Anfossi, "One-year simulation of power plant emissions using a parallel Lagrangian particle model", ITM - NATO/SPS, International meeting on Air pollution modelling and its application, Leipzig, Germany, 2006, (poster presentation)
77. **S Alessandrini**, E Ferrero, S Trini Castelli, "Turbulence closure in atmospheric circulation model and its influence on the dispersion", 10th International Conference on Harmonisation within dispersion modelling for regulatory purposes, Sissi, Greece, 2005 (poster presentation)
78. **S Alessandrini**, E Ferrero, S Trini Castelli, D Anfossi, "Simulation and comparison of mean flow, turbulence and dispersion in complex terrain", 9th International Conference on Harmonisation within dispersion modelling for regulatory purposes, Garmisch, Germany, 2004
79. **S Alessandrini,** ”Numerical models for the study of the pollutants dispersion in the atmosphere”, CAPI “8th workshop on high performance computing”, Milano, Italy, 2004
80. **G Tinarelli**, S Alessandrini, D Anfossi, F Pavone, S Cuffini, “Assessment of pollution impact over Turin suburban area using integrated methods”, 25th NATO/CCMS international Technical meeting on air pollution modelling and its application, Louvain la Neuve, Belgium, 2001 (poster presentation)

SPORT ACTIVITIES

1998-present Mountain bike: Participation to more than 200 races in the Expert category

1990-1999 Basket: Participation to the Italian 1st division Italian tournament

LANGUAGES

Italian (native), English (fluent)