

## PERSONAL INFORMATION

Francesco UBOLDI

✉ [uboldi@magritte.it](mailto:uboldi@magritte.it)🌐 [www.magritte.it/francesco.uboldi](http://www.magritte.it/francesco.uboldi)🌐 [www.researchgate.net/profile/Francesco\\_Uboldi](http://www.researchgate.net/profile/Francesco_Uboldi)

Sex M | Date of birth 17/08/1964 | Nationality Italian

## COMPETENCE OVERVIEW

- Numerical design and implementation of solutions in technical-scientific fields.
- Data Assimilation in meteorology and oceanography with variational and sequential methods. Control of dynamic instabilities and error growth by assimilation of observations. Optimal location of "targeted" observations and their dynamically consistent assimilation. Objective analysis and spatial interpolation of meteorological and oceanographic data. Automatic quality control of data from observational networks.
- Meteorology, Oceanography, Climatology.
- Dynamical system predictability.
- Observation representativity and quality control. Weather prediction verification.
- Hydrological characterization of a territory, frequency of rainfall extremes.
- Statistical analysis and models (environment/geophysics and socio-economical field).
- Software applications: database, web, server-side and client-side programming.
- **FRANCE** 2002-2005
- **JAPAN** 1996-1998

PERIODS OF WORK ABROAD  
(details below)

## WORK EXPERIENCE

From May 2017

## Researcher

ARIANET Srl, Milan, ITALY - <http://www.aria-net.it/>

## Topics:

- Data assimilation with mesoscale and microscale, meteorological and air-quality models
- Adjoint / inverse methods. Localization of an unknown pollutant source and emission estimation: variational method with retroSPRAY, the adjoint of the lagrangian particle dispersion model SPRAY
- Objective analysis, Optimal Interpolation.
- Model forecast verification.

**Business or sector:** Meteorology, Air quality, Data Assimilation.

November 2016 – April 2017

## Independent researcher and scientific consultant

## Customers:

- ARIANET Srl, Milan, ITALY
- NVE (The Norwegian Water Resources and Energy Directorate), Oslo, NORWAY

## Topics:

- Localization of an unknown pollutant source and emission estimation: variational method with retroSPRAY, the adjoint of the lagrangian particle dispersion model SPRAY
- Analysis of precipitation by combining rain-gauge observations and meteorological radar estimates.

**Business or sector:** Meteorology, Hydrology, Climatology, Civil Protection, Data Assimilation.

2015, 2016

## Web/database programming

Collaboration with Magritte SnC, Milan: participation to the realisation of a prototype software intended to support micro-trade, based on **MySQL** and **PHP** server-side, **JavaScript/jQuery** client-side and of a mobile device App based on the hybrid multi-platform technology Apache **Cordova**.

## Teaching in secondary school

- Aprile-Giugno 2016: Mathematics — I. I. S. "P. Frisi", Milano, Italy.
- Aprile 2015: Computer Science, — I. T. I. / L. S. A. "P. HenseMBERGER", Monza, Italy.

### Scientific research

Stationarity analysis of rainfall annual maxima climatology in Lombardy (Italy) 1950-2005.

## 2014 Study and personal improvement

## Revision:

- Climatological interaction between intense atmospheric convection and ocean subsurface temperature warm anomaly.
- Verification of numerical and subjective weather forecast.
- Languages PHP, HTML, CSS.

## New topics:

- Biology and Genetics (university text: Brooker et al., Vols. 1 and 2).
- Languages: Python, Java, Javascript, jQuery, Apache Cordova.

## 2005 - 2013 Independent researcher and scientific consultant

## Main customers:

- ARPA , Meteorological and Hydrological Service, Milan, Italy
- Provincia Autonoma di Trento, Meteorological Service, Trento, Italy
- CNR - ISAC (Institute of Sciences of the Atmosphere and Climate), Bologna, Italy
- ARIANET Srl, Milan, Italy
- CAPP (Centre for Analysis of Public Policies) - University of Modena and Reggio Emilia, Italy
- Magritte SNC, Milan, and Ministry of Labour and Social Affairs of the Italian Government
- University of Camerino, MC, Italy
- Nubila SAS, Bologna, Italy

## Main topics:

- Multiple-scale error growth in a convection-resolving model. Estimation of trajectory instabilities of a chaotic, high-dimensional, complex system with many different scales of motion.
- Hydrological characterization of a climatologically and orographically complex territory for return periods of extreme rainfall events (with uncertainty evaluation).
- Spatial interpolation algorithms for meteorological data (temperature, relative humidity, wind, precipitation, surface pressure, solar radiation, concentration of air pollutants) with uncertainty evaluation. Integration of in-situ observations and weather radar data for precipitation analysis.
- Automatic data quality control and analysis of observation representativity with respect to NWP (Numerical Weather Prediction) fields.
- Estimation of dynamical instabilities present in assimilation-forecast systems of the atmosphere and the ocean. Control of error growth by assimilation of observations.
- Statistical analysis in the socio-economic field (estimation of the time evolution of poverty with relation to retirement policies).
- Variational assimilation of satellite radio-occultation data
- Analysis and optimization of software for analysis of X-band disdrometer radar signal.

**Business or sector:** Meteorology, Hydrology, Climatology, Civil Protection, Physics of the Atmosphere, Data Assimilation, Dynamic System Predictability, Socio-Economic Statistics.

## 2002 - 2005 Researcher

Université de Bretagne Occidentale - Brest, FRANCE

Postdoc contract. Detached at LEGOS/SHOM - CNRS - Toulouse, **FRANCE**

CNRS: Centre national de la recherche scientifique

LEGOS: Laboratoire d'Études en Géophysique et Océanographie Spatiales

SHOM: Service hydrographique et océanographique de la Marine

## Main topics:

- Optimisation of observational networks and ocean data assimilation.
- Development of assimilation system instabilities estimation techniques for optimal location of targeted observations and their assimilation in a primitive-equation ocean model.
- Collaboration with CNR-ISAC Bologna: development of the method BDAS (Breeding on the Data Assimilation System) for unstable direction estimation and AUS (Assimilation in the Unstable Subspace) for error growth control by assimilation of observations.
- Variational and sequential data assimilation

**Business or sector:** Data Assimilation, Dynamic System Predictability, Physical Oceanography

1999 - 2001 **Independent researcher and scientific consultant****Main customers:**

- CSI-Piemonte, Regional Meteorological Service, Turin, Italy
- CNR-ISAO (Institute of Studies on the Atmosphere and Ocean), Bologna, Italy
- ENEA, Centro ricerche Casaccia, Roma, Italy
- PicoDATA Srl: data management for local weather services in Italy (Piedmont, Sardinia, Trentino, Veneto)

**Main topics:**

- Three-dimensional, high resolution objective analysis of temperature observations from the mesoscale network.
- 3D analysis (Optimal Interpolation) as initial condition of NWP (Numerical Weather Prediction) models, in collaboration with ENEA, Centro ricerche Casaccia, Roma, Italy.
- Optimal location of targeted observations.
- Management of meteorological observations and model fields (data flow and storage) in Unix and Linux environment (collaboration with PicoDATA Srl).

**Business or sector:** Meteorology, Physics of the Atmosphere, Data Assimilation, Dynamic System Predictability.

1998 - 1999 **Researcher**

CNR-ISAO (Institute of Studies on the Atmosphere and Ocean), Bologna, Italy

**Main topics:**

- Weak-constraint variational data assimilation.
- Diagnostics of cyclonic cases in an increased greenhouse gases scenario.

**Business or sector:** Meteorology, Physics of the Atmosphere, Data Assimilation, Climatology.

1996 - 1998 **Researcher**

Meteorological Research Institute - Ocean Division, Tsukuba, **JAPAN**

**Main topics:**

- Design of an ocean eddy synthetic model for the Data Assimilation System of the North Pacific Ocean Circulation Model.
- Weak-constraint variational data assimilation (with consideration of model error).

**Business or sector:** Data Assimilation, Physical Oceanography

1992 - 1996 **Meteorologist**

CISE SpA (1992-1993); ISMES SpA (1994-1996) (ENEL-controlled private companies)  
 Detached at ENEL-CRAM, Milan, Italy  
 ENEL: the Italian Electric Energy Company;  
 CRAM: Research Center on Environment and Materials

**Main topics:**

- Operational weather forecasts.
- Objective analysis of 2D and 3D meteorological fields.
- Implementation of diagnostics algorithms for operational weather forecasting.
- Research: data assimilation for limited-area numerical weather prediction models.

**Business or sector:** Meteorology, physics of the atmosphere, data assimilation.

1990 - 1991 **Research and Development**

AGIP S.p.A. (the Italian Petroleum Company), S. Donato Milanese, MI, Italy.

- Simulation of fluid dynamics in porous means (hydrocarbon oil and gas reservoirs) with finite-difference models

**Business or sector:** Evaluation and simulation of hydrocarbon reservoirs.

**EDUCATION**

1983-1989

**LAUREA IN FISICA** ("vecchio ordinamento": "old system")  
**- degree in Physics (master level)**

Università degli Studi di Milano, Italy

- Thesis: Utilizzo di materiali a transizione di fase solido-solido per accumulo termico (Use of solid-solid phase transition materials for thermal storage). Marks 108/110. October 1989.

**Post-graduation courses**

June 1997 (2 weeks)

**Summer School on Inverse Methods and Data Assimilation**

COAS (College of Earth, Ocean, and Atmospheric Sciences), Oregon State University, Corvallis, Oregon, USA. Director: Prof. Andrew F. Bennett

- Inverse methods, variational data assimilation with weak and/or strong dynamics constraint.

August 1993 (4 weeks)

**International Summer School on Assimilation of Meteorological and Oceanographical Observations**

Université de Toulon e du Var, La Garde, FRANCE. Director: Prof. Olivier Talagrand.

- Lessons and talks in English: variational methods - tangent linear and adjoint of the circulation (NWP) model, sequential methods and Kalman filters; optimal interpolation; first-order sensitivity to initial conditions; splines; Bayesian methods; ensemble forecasting and probabilistic predictions.

November 1990

**Course on hydrocarbon reservoir models**

Computer Modelling Group, Calgary, Alberta, CANADA

- Lessons and numerical practice on finite-difference models of fluid dynamics in porous means.

**LANGUAGES**

Mother tongue(s)

Other language(s)

**ITALIAN**

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
<b>ENGLISH</b>	C2	C2	C2	C2	C2
<b>FRENCH</b>	C2	C2	C2	C2	C2
<b>JAPANESE</b>	B1	B1(*)	B1	B2	B1(*)
	Certificate Japanese-Language Proficiency. Level 2 (top:1, bottom:4), Tokyo, December 1997, Association of International Education Japan and The Japan Foundation. (*): today with dictionary				
<b>SPANISH</b> (courses: I - 2013, II - 2014)	B1	B1	B1	B1	B1

## COMPUTER SKILLS

---

### PROGRAMMING AND SCRIPTING LANGUAGES:

- **Fortran** (f77, f90, f95 etc.): 20-year experience, in particular for numerical computation, and working several times with **large complex codes** and **large quantities of data**, also making use of **MPI** for parallel computation.
- **C**: for example, in 2009 I wrote, tested and used two C functions to write and read (the CAPP model state) in **Stata binary data format**, starting from the official documentation available on-line. The work for Magritte SnC, in the same period, was also done using C.
- **R**; Stata: statistical analysis software and their scripting languages.
- **Javascript**; **PHP**; **jQuery**; Apache Cordova; HTML; CSS.
- Database management software: **MySQL**; LibreOffice-Base/MS-Access (in the past: Paradox).
- Basis of **Python** and Java
- Geophysical analysis and graphics software and formats: GrADS, GRIB, NETCDF, Vis5D, NCAR-graphics (besides spreadsheets as LibreOffice-Calc, MS-Excel) .
- Other scientific analysis software: Gnuplot, Octave, Matlab.
- Shell scripts in Unix/Linux environment.
  
- **VI** editor (VIM, GVIM).
- **EPUB** e-book format.
- Operating systems: **Unix/Linux**; MS-Windows; Apple MacIntosh/IOS; (in the past: DEC-VMS; MainFrame IBM and HITACHI).
- Office suites (MS office, LibreOffice/OpenOffice); **LaTeX**, LyX. Main software packages with operating systems Linux, MS-Windows and Apple.

## PUBLICATIONS

## A - INTERNATIONAL, PEER-REVIEWED SCIENTIFIC JOURNALS

- C. Lussana, O. E. Tveito and F. Uboldi, 2018. Three-dimensional spatial interpolation of two-meter temperature over Norway. *The Quarterly Journal of the Royal Meteorological Society*, **144**, 344-364, DOI:10.1002/qj.3208
- F. Uboldi and C. Lussana, 2018. Evidence of non-stationarity in a local climatology of rainfall extremes in northern Italy. *International Journal of Climatology*, **38**, 506-516, DOI: 10.1002/joc.5183
- F. Uboldi and A. Trevisan, 2015. Multiple-scale error growth in a convection-resolving model. *Nonlinear Processes in Geophysics*, **22**, 1-13, DOI: 10.5194/npg-22-1-2015
- F. Uboldi, A. N. Sulis, C. Lussana, M. Cislighi and M. Russo, 2014. A spatial bootstrap technique for estimation of rainfall annual maxima distribution parameters. *Hydrology and Earth System Sciences*, **18**, 981-995, DOI: 10.5194/hess-18-981-2014
- C. Lussana, F. Uboldi, and M. R. Salvati, 2010. A spatial consistency test for surface observations from mesoscale meteorological networks. *The Quarterly Journal of the Royal Meteorological Society*, **136**, 1075-1088, DOI: 10.1002/qj.622
- C. Lussana, M. R. Salvati, U. Pellegrini, and F. Uboldi 2009. Efficient high-resolution 3-D interpolation of meteorological variables for operational use. *Advances in Science and Research*, **3**, 105-112, DOI: 10.5194/asr-3-105-2009
- C. Lussana and F. Uboldi, 2009. Reference crop evapotranspiration estimate using high-resolution meteorological network's data. *Advances in Science and Research*, **3**, 113-118, DOI: 10.5194/asr-3-113-2009
- F. Uboldi, C. Lussana and M. Salvati, 2008: Three-dimensional spatial interpolation of surface meteorological observations from high-resolution local networks. *Meteorological Applications*, **15**, 331-345, DOI: 10.1002/met.76
- A. Carrassi, A. Trevisan, L. Descamps, O. Talagrand and F. Uboldi, 2008: Controlling instabilities along a 3DVar analysis cycle by assimilating in the unstable subspace: a comparison with the EnKF. *Nonlinear Processes in Geophysics*, **15**, 503-521, DOI: 10.5194/npg-15-503-2008
- A. Carrassi, M. Ghil, A. Trevisan and F. Uboldi, 2008: Data assimilation as a nonlinear dynamical systems problem: Stability and convergence of the prediction-assimilation system. *Chaos*, **18**, 023112, DOI: 10.1063/1.2909862
- A. Carrassi, A. Trevisan and F. Uboldi, 2007: Adaptive Observations and Assimilation in the Unstable Subspace by Breeding on the Data-Assimilation System. *Tellus*, **59A**, 101-113, DOI: 10.1111/j.1600-0870.2006.00210.x
- F. Uboldi and A. Trevisan, 2006: Detecting unstable structures and controlling error growth by assimilation of standard and adaptive observations in a primitive equation ocean model. *Nonlinear Processes in Geophysics*, **13**, 67-81, DOI: 10.5194/npg-13-67-2006
- F. Uboldi, A. Trevisan and A. Carrassi, 2005: Developing a Dynamically Based Assimilation Method for Targeted and Standard Observations. *Nonlinear Processes in Geophysics*, **12**, 149-156, DOI: 10.5194/npg-12-149-2005
- A. Trevisan and F. Uboldi, 2004: Assimilation of standard and adaptive observations within the unstable subspace of the observation-analysis-forecast cycle system. *Journal of the Atmospheric Sciences*, **61**, 103-113, DOI: 10.1175/1520-0469(2004)061<0103:AOSATO>2.0.CO;2
- M. Kamachi, T. Kuragano, H. Ichikawa, H. Nakamura, A. Nishina, A. Isobe, D. Ambe, M. Arai, N. Gohda, S. Sugimoto, K. Yoshita, T. Sakurai and F. Uboldi, 2004: Operational Data Assimilation System for the Kuroshio South of Japan: Reanalysis and Validation. *Journal of Oceanography*, **60**, 303-312, DOI: 10.1023/B:JOCE.0000038336.87717.b7
- M. Kamachi, T. Kuragano, S. Sugimoto, K. Yoshita, T. Sakurai, T. Nakano, N. Usui and F. Uboldi, 2004: Short-range Prediction Experiments with Operational Data Assimilation System for the Kuroshio South of Japan. *Journal of Oceanography*, **60**, 269-282, DOI: 10.1023/B:JOCE.0000038333.97882.51
- M. Kamachi, T. Kuragano, N. Yoshioka, J. Zhu and F. Uboldi, 2001: Assimilation of satellite altimetry into a western North Pacific operational model. *Advances in Atmospheric Science*, **18**, 767-786.
- F. Uboldi and M. Kamachi, 2000: Time-space weak-constraint data assimilation with nonlinear models. *Tellus*, **52A**, 412-421, DOI: 10.1034/j.1600-0870.2000.00878.x
- F. Uboldi and A. Buzzi, 1994: Successive Corrections Methods Applied to Mesoscale Meteorological Analysis. *Nuovo Cimento C*, **17**, 745-761, DOI: 10.1007/BF02510883

## JOURNAL REFEREE FOR:

Advances in Science and Research; International Journal of Bifurcation and Chaos; Journal of Applied Meteorology and Climatology; Journal of Oceanography; Nonlinear Processes in Geophysics; Tellus-A.



## PUBLICATIONS

## B 1/2 - CONTRIBUTIONS TO CONFERENCES AND SEMINARS

- F. Uboldi, 2017. Multiple-scale error growth and data assimilation in convection-resolving models. Invited talk at: "Numerical Modelling, Predictability and Data Assimilation in Weather, Ocean and Climate – A Symposium honouring the legacy of Anna Trevisan", 17-20 October, 2017, Bologna, ITALY.
- F. Uboldi, 2017. Predictability and data assimilation issues in multiple-scale convection-resolving systems. Meteorologisk Institutt, 23 March 2017, Oslo, NORWAY.
- F. Uboldi, 2017. Hourly precipitation analysis combining rain-gauge observations with radar estimates. NVE (The Norwegian Water Resources and Energy Directorate), 22 March 2017, Oslo, NORWAY.
- F. Uboldi, 2017. Individuazione di una sorgente incognita di inquinanti con retroSPRAY: metodo variazionale. Presentazione presso ARIANET, 15 Marzo 2017, Milano, ITALY
- F. Uboldi, 2017. (Ricostruzione di sorgenti:) Metodo bayesiano /variazionale. Presentazione alla IV giornata sulla modellistica in aria(net), 25 Gennaio 2017, Milano, ITALY.
- F. Uboldi, 2016. Variazioni dei massimi di precipitazione in area prealpina — Evidenza di cambiamento locale nel tempo della climatologia dei massimi annuali di precipitazione. Seminario presso ARPA Emilia Romagna, 2 Maggio 2016, Bologna, ITALY.
- F. Uboldi and C. Lussana, 2013. Representativity of a mesonet temperature observations with respect to model fields. Poster presentation at EMS (European Meteorological Society) - ECAM (European Conference on Applications of Meteorology) meeting, 09-13 September 2013, Reading, UK.
- F. Uboldi, A. N. Sulis, M. Cislighi, C. Lussana and M. Russo, 2013. Systematic errors and time dependence in rainfall annual maxima statistics in Lombardy. Oral presentation at EMS (European Meteorological Society) - ECAM (European Conference on Applications of Meteorology) meeting, 09-13 September 2013, Reading, UK
- C. Lussana, M. Ranci, F. Uboldi, 2012. A quality-control-oriented database for a mesoscale meteorological observation network. Poster presentation at EGU General Assembly, 22-27 April 2012, Vienna, AUSTRIA
- F. Uboldi, 2012. Confronto tra stime da campi di modello e osservazioni della rete regionale lombarda; classificazione delle stazioni per rappresentatività riferita a COSMO-I7 e ECMWF-0125. Seminario presso ARPA Emilia Romagna, 5 Giugno 2012, Bologna, ITALY.
- F. Uboldi, A. Trevisan and O. Drofa, 2011. Assessing the role of remote-sensing data assimilation in controlling the trajectory instabilities of a convection-resolving system. Poster presentation at the joint SRNWP (Short-Range Numerical Weather Prediction Programme) Workshop on Data Assimilation and Ensemble Prediction System, 23-25 February 2011, Bologna, ITALY.
- F. Uboldi, C. Lussana, M. R. Salvati and M. Ranci, 2010. Interpolation and automatic quality control in mesoscale observation networks. Seminar at the Meteorological Institute of Belgium, 26 November 2010, Bruxelles, BELGIUM.
- F. Uboldi, A. Trevisan, 2010. Perturbation growth characterization in a convection-resolving system. Oral presentation at the workshop "Instability properties of regional models: ensemble forecast, boundary forcing and assimilation" at the Meteorological Institute of Belgium, 25 November 2010, Bruxelles, BELGIUM.
- C. Lussana, F. Uboldi and C. Antoniazzi, 2010. Spatial interpolation of solar global radiation. Oral Presentation at 10th conference EMS - 8th ECAC (European Conference on Applied Climatology), 13-17 September 2010, Zurich, SWITZERLAND.
- C. Lussana, F. Uboldi, M. R. Salvati and M. Ranci, 2010. Spatial interpolation of atmospheric pressure observations from automatic weather stations in complex alpine terrain. Poster Presentation at 10th conference EMS - 8th ECAC, 13-17 September 2010, Zurich, SWITZERLAND.
- F. Uboldi, A. Trevisan and S. Davolio, 2010. Evolution and growth of perturbations in a convection-resolving model. Poster presentation at the 4th HyMeX (HYdrological cycle in Mediterranean EXperiment) workshop,, 8-10 June 2010, Bologna, ITALY.
- F. Uboldi, 2010. Inspecting the trajectory instabilities of a convection-resolving model. Poster presentation at the ECODYC (Exploring Complex Dynamics in High-Dimensional Chaotic Systems: From Weather Forecasting to Oceanic Flows) workshop, 25-29 January 2010 Dresden, GERMANY.
- C. Lussana, M. R. Salvati and F. Uboldi, 2009: Testing the performance of a spatial consistency test for data quality control. Oral Presentation at 9th conference EMS - 9th ECAM, 28 September - 2 October 2009, Toulouse, FRANCE.
- C. Lussana, M. Salvati, U. Pellegrini and F. Uboldi, 2008: Efficient high resolution 3-D interpolation of meteorological variables interpolation of meteorological variables for operational use. Oral Presentation at the 8th conference EMS - ECAC, 29 September - 3 October 2008, Amsterdam, HOLLAND.
- M. R. Salvati, C. Lussana e F. Uboldi, 2007: Verification of worded areal forecast of temperature extremes using a high resolution mesoscale analysis field. Poster presentation at the 7th conference EMS - ECAC, 1-5 October 2007, Madrid, SPAIN
- F. Uboldi, M. R. Salvati, and C. Lussana 2007: Spatial analysis of observations from high resolution automatic meteorological networks. Poster presentation at the 7th conference EMS - ECAC, 1-5 October 2007, Madrid, SPAIN



## PUBLICATIONS

## B 2/2 - CONTRIBUTIONS TO CONFERENCES AND SEMINARS

- C. Lussana, M. Ranci, M. R. Salvati, and F. Uboldi, 2007: Automatic data quality control using spatial interpolation with statistical methods. Poster presentation at the 7th conference EMS - ECAC, 1-5 October 2007, Madrid, SPAIN
- A. Trevisan, F. Uboldi e A. Carrassi, 2007: L'assimilazione dati come problema di dinamica non-lineare. Presentazione orale al convegno nazionale di fisica della terra fluida e problematiche affini, 11-15 Giugno 2007, Ischia (NA), ITALIA.
- F. Uboldi, C. Lussana e M. Salvati, 2007: Interpolazione spaziale e controllo di qualità automatico di reti osservative regionali ad alta risoluzione. Poster al convegno nazionale di fisica della terra fluida e problematiche affini, 11-15 Giugno 2007, Ischia (NA), ITALIA.
- A. Carrassi, A. Trevisan, L. Descamps, O. Talagrand and F. Uboldi, 2007: Controlling the instabilities along a 3DVAR analysis cycle by assimilating in the unstable subspace: a comparison with the EnKF. Oral presentation at the annual EGU general assembly, 19 April 2007, Wien, AUSTRIA.
- A. Trevisan, A. Carrassi and F. Uboldi, 2006. Prospects of forecast improvements by assimilating in the unstable subspace. Poster and extended abstract, Second THORPEX International Science Symposium, 04-08 December 2006, Landshut, GERMANY. WMO/TD N.1355, WWRP/THORPEX N.7.
- C. Lussana, M. Salvati, M. Ranci and F. Uboldi, 2006: Vertical and horizontal detrending for the optimal interpolation of temperature observations from a high resolution meteorological network. Oral presentation at the 6th conference EMS annual meeting 4-8 September 2006, Ljubljana, SLOVENJA
- C. Lussana, M. Ranci, M. Salvati, F. Uboldi and M. Valentini, 2006: 3D Interpolation of high resolution meteorological observations as a tool for forecast verification. Poster presentation at the FORALPS project conference, September 6th, 2006, Ljubljana, SLOVENJA.
- F. Uboldi, A. Carrassi and A. Trevisan, 2005: Developments of a dynamically consistent targeting and assimilation method. Poster presentation at the Fourth WMO International Symposium on Assimilation of Observations in Meteorology and Oceanography, 18-22 April 2005, Prague, CZECH REPUBLIC.
- A. Trevisan, A. Carrassi and F. Uboldi, 2004: Targeting and assimilation: a dynamically consistent approach. Poster presentation at the First THORPEX International Science Symposium, 6-10 December 2004, Montreal, Québec, CANADA.
- F. Uboldi, A. Trevisan and A. Carrassi, 2004: Developing a dynamically based assimilation method for targeted and standard observations. Seminar at LMD (Laboratoire de Météorologie Dynamique), Paris, FRANCE.
- F. Uboldi, A. Trevisan and A. Carrassi, 2004: Developing a dynamically based assimilation method for targeted and standard observations. Oral presentation at the 1st EGU general assembly, April 2004, Nice, FRANCE.
- A. Carrassi, A. Trevisan and F. Uboldi, 2003: Development of a dynamically based assimilation method. Poster presentation at the Roger Daley memorial symposium, October 2003, Montreal, CANADA.
- A. Buzzi, A. Carillo, M. D'Isidoro, P. Malguzzi, P. M. Ruti, N. Tartaglione and F. Uboldi, 2001: 3D-VAR Assimilation Experiments of MAP events using BOLAM. Proceedings of the 3rd EGS Plinius Conference on Mediterranean Storms, October 2001, Baja Sardinia OT, Italy.
- F. Uboldi, 2000: Tecniche di assimilazione dati in meteorologia e oceanografia. Presentazione orale al meeting: "Caos e complessità: lo stato dell'arte". Società Italiana Caos e Complessità, Fondazione ENI E. Mattei and Politecnico di Milano. Milano, 17-18 Febbraio 2000.
- F. Uboldi and M. Kamachi, 1999: Weak and Strong Constraint Assimilation with a Nonlinear Model. Poster presentation at the Third WMO (World Meteorological Organization) International Symposium on Assimilation of Observations in Meteorology and Oceanography, June 1999, Quebec City, CANADA.
- F. Uboldi and M. Kamachi, 1997: Eddy Feature Model of Kuroshio Warm-Core Rings for Ocean Data Assimilation. Poster presentation at the Japanese Oceanographical Society Meeting, April 1997, Tsukuba, JAPAN.
- F. Uboldi, A. Buzzi, R. Pelosini and G. Poggi, 1996: On the impact of 3-D analysis of conventional observations on the simulation of a case of intense precipitation south of the Alps. Oral presentation at the May 1996 MAP meeting, Innsbruck, AUSTRIA. Map Newsletters, 5, 38-39.