

PERSONAL INFORMATION

Francesca Sini



📍 Marche Region, Civil Protection Service- Regional Functional Centre, Via del Colle Ameno 5, 60126 Loc. Torrette - Ancona, Italy

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📄 francesca-sini, Numana

POSITION

Technical Officer - Hydrologist

WORK EXPERIENCE

December 2006 - Present

Civil servant

Marche Region, Civil Protection Service - Regional Functional Centre

<http://www.regione.marche.it/Regione-Utile/Protezione-Civile/Strutture-Operative/Centro-Funzionale-Multirischi>

Main activities:

- hydrological forecast and monitoring;
- drafting of hydrogeological alert bulletin, floods event report and annual of hydrometric data;
- measurements of liquid flow in open channels (ADCP, ADV and current meters) and determination of the stage-discharge relation;
- hydrological and hydraulic modelling;
- snow stratigraphy;
- Geographic Information System (GIS) elaboration;
- European projects design and management, financial and administrative issues;
- involved in civil protection simulation and emergency activities

September 2009 – Present

Sessional lecturer/Temporary professor

GIS technologies for environment and civil protection” course - 6 credits (CFU), Master Degree in Environmental Risk and Civil Protection – Marche Polytechnic University, Italy; teaching and tutoring activities. <http://www.disva.univpm.it/>

October 2005 – November 2006

Postdoctoral researcher

Research activities on *Analysis of shallow landslide triggering factors*. University of Florence, Italy.

May - June 2005

Teaching Assistant

Watershed management course - Environmental Engineering, University of Genoa-Savona campus, Italy <http://www.ingegneria.unige.it/index.php/polo-di-savona>.

May - July 2004

Teaching Assistant

Water resources management course- Environmental Engineering, University of Genoa-Savona campus, Italy.

<http://www.ingegneria.unige.it/index.php/polo-di-savona>

February 2004

Teaching Assistant

Data Fusion, Data Assimilation course, inside the “Specialized hydro-meteorologist for operative centres” Master, organized by Sudgest S.c.a.R.L.- COS(OT), Italy.

April 2002 - December 2002

Technical employee

CIMA consultant - Temporary employee at National Civil Protection Department-Hydrogeological Risk and Water Resources Assessment and Management Service, Rome, Italy. [www.cimafoundation.org](http://www.cimafoundation.org), [www.protezionecivile.org](http://www.protezionecivile.org).

February 2001 - January 2002

Technical employee

Temporary employee - Studio Belluni, involved in Agenda 21 and sustainable development projects. Rome, Italy.

**EDUCATION AND TRAINING**

9<sup>th</sup> February 2006

**Ph.D. in Methods and Technologies for Environmental Monitoring**

University of Basilicata (XVIII cycle) –Scholarship winner. <http://portale.unibas.it/site/home.html>.  
Thesis: Satellite Data Assimilation model for the estimation of surface energy fluxes. Supervisors: G.Boni, A. Taramasso. CIMA, University of Genoa.

- Research topics: data assimilation techniques, hydrological variables estimation from remote sensing data, land-surface interaction processes, hydrologic modelling.

September – December 2004  
September – October 2003

**Graduate Visiting Student**

Parsons Laboratory, Department of Civil and Environmental Engineering of the Massachusetts Institute of Technology (MIT), under the supervision of Prof. D. Entekhabi- Cambridge MA (U.S.A.) - inside the Italian Research Centre (CNR) and MIT Cooperative Agreement for the Study of Hydrogeological Hazards and Climate Change.

6<sup>th</sup> February 2003

**Engineering professional Qualification**

Italian qualification for engineering practice, University of Rome La Sapienza, Italy. <http://www.uniroma1.it/>

October – December 2000

**Trainee**

Stage on European Programs for public and private financial support - Studio Valla, Rome Italy

20<sup>th</sup> December 2001

**Master of Sc.- Laurea, Environmental Engineering**

University of Rome La Sapienza, Italy. <http://www.uniroma1.it/>.  
Thesis: "Geo-resources and Environment: Sardinian zeolytes - characterization and industrial use. Supervisors: M. Violo, Prof. G.Cao.

March- July 1999

**Visiting Student**

Socrates-Erasmus project scholarship winner; participating in technical and languages courses. Universidad de Granada , Spain. <https://www.ugr.es>

July 1994

**High School Degree**

Liceo scientifico "Malpighi ", Roma Italy. <http://www.iisviasilvestri.it>

February - June 1993

**Exchange student**

inside the "Academic Year in America" project sponsored by "the American Institute for Foreign Study Foundation"- Diploma -Wahama High School, West Virginia U.S.A. <http://wahama.maso.k12.wv.us/>

**PERSONAL SKILLS**

Mother tongue(s)

Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C2
Spanish	C1	C1	B2	B2	B1

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

Communication skills

Exercised teaching and communication skills. Good ability of dealing with public talks and exposition

Organisational / managerial skills

Good ability of relations with other people and of team building. Skills in managing complex project, in terms of activities scheduling, financial and administrative resources.

**Job-related skills** Good skills in critical reasoning, planning, problem solving and decision making.

**Digital competence**

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Independent user	Independent user	Independent user	Independent user	Independent user

Levels: Basic user - Independent user - Proficient user  
[Digital competences - Self-assessment grid](#)

**ECDL specialized GIS – GIS Certificate (1<sup>st</sup> April 2010)**

- specialised in geoprocessing and data analysis - Qgis and ArcMap GIS software
- Office suite , Latex, Matlab, HecRas

**Other skills** Painting, playing guitar, trekking, tennis, skiing

**Driving licence** B

A1/A3 Open Sub Category for Unmanned Aircraft Systems UAS – identification number: ITA-RP-000018563ACO – expiration date: 04.10.2026

## ADDITIONAL INFORMATION

### Honours and awards

- National Civil Protection meritorious service award received for the relief work during L'Aquila Earthquake.
- 6th-14th November 2012 - Member (advisor) of the Italian delegation at the 14th session of the Commission of Hydrology (CHy) - World Meteorological Organization – Geneva, Switzerland.
- 29th August-2nd September- Invited lecturer at *ISSAOS 2005 summer school "Hydrological modelling and water cycle. Coupling the atmospheric and hydrological models"*, organized by CETEMPS, University of L'Aquila, Italy. Contribution: Measurements of Hydrological variables from satellite: application to Mediterranean river basins. <http://cetemps.aquila.infn.it/issaos/>

### Publications

- Paoletti, M.; Pellegrini, M.; Belli, A.; Pierleoni, P.; Sini, F.; Pezzotta, N.; Palma, L. Discharge Monitoring in Open-Channels: An Operational Rating Curve Management Tool. *Sensors* 2023, 23, 2035. <https://doi.org/10.3390/s23042035>.
- Sabbatini, L.; Palma, L.; Belli, A.; Sini, F.; Pierleoni, P. A Computer Vision System for Staff Gauge in River Flood Monitoring. *Inventions* 2021, 6, 79. <https://doi.org/10.3390/inventions6040079>.
- Traini M., Speranza G., Sofia S., Castelli V., Sini F., Sandroni P. La ricerca storica per ampliare la conoscenza dei Monti Sibillini. *Neve e Valanghe* n.93/2019.
- Ladina C., Marzorati S., Frapiccini M., Monachesi G., Cattaneo M., Paratore M., Sini F., Ferretti M., Experimental activities for the implementation of seismic monitoring of public buildings in Marche region, *Quaderni di Geofisica.*, 2015 n. 127. ISSN 1590-2595.
- Tagnani C. , Sini F., Pellegrini M., Mapping Flood vulnerability. *GIM International- Issue 2, Vol.29- pages 18-21, February 2015.*
- Picciotti E., Marzano F. Colaiuda V., Cinque G., Massabò M., Deda M., Campanella P., Abeti L., Sini F., Prenci S., Dhima M., Zorba P., Berdufi I., Metodi M., Sala P., Rezzolla M., Tomljanovic M., Komericki Z., Iovino A., Santacasa A., Rossi L., The ADRIARadNet project: ADRIAtic integrated RADar-based and web-oriented information processing system NETWORK to support hydro-meteorological monitoring and civil protection decision. *ERAD 2014 proceedings -the Eighth European Conference on Radar in Meteorology and Hydrology-ID143.*
- Pellegrini, M., Sini, F., Taramasso, A.C. (2012). Wavelet-based automated localization and classification of peaks in streamflow data series. *Computers & Geosciences* 40, pages 200-204.
- Sini, F., G. Boni, F. Caparrini, and D. Entekhabi (2008), Estimation of large-scale evaporation fields based on assimilation of remotely sensed land temperature, *Water Resour. Res.*, 44, W06410, doi:10.1029/2006WR005574
- Sini F., Boni G. and Entekhabi D., Measurements of hydrological variables from satellite: application to Mediterranean regions, in *Hydrological modelling and water cycle: Coupling of the atmospheric and hydrological models.* ISBN-10:354077842X; ISBN-13:978-3540778424. Springer.
- Sini F., Boni G. and Entekhabi D.: Satellite data assimilation model with precipitation and micrometeorological forcing for the estimation of surface energy fluxes, in *Book of Abstracts-International Workshop on The Terrestrial Water Cycle: Modeling and Data Assimilation across Catchment Scales.*, edited by A.J. Teuling, H. Leijnse, P.A. Troch, J. Sheffield and E.F. Wood, pp. 155–158, Princeton, NJ, 2004 October 25–27-ISSN 0926-230X.

### Conferences / Abstracts

- Gabellani, S., Libertino, A., Delogu, F., Ercolani, G., Darienzo, M., Sini, F., and Giordano, V.: A probabilistic hydrometeorological forecasting chain for operational warning procedures in Marche Region , *EGU General Assembly 2022, Vienna, Austria, 23–27 May 2022, EGU22-8144*, <https://doi.org/10.5194/egusphere-egu22-8144>, 2022.
- Pellegrini M., Iocca F., Lazzeri M., Sini F., Sandroni P., Di Fabio S., Picciotti E., Tomassetti B., Lombardi A., Colaiuda V., Marzano F.S., Barbizzi N.: Potenziamento dei sistemi osservativi e previsionali della regione Marche nell'ambito del progetto Europeo STREAM. *RadMet2021*;
- Ciarapica L., Baglioni L., Sini F., Pellegrini M., Lazzeri M., Sandroni P.: Sub-basin scale of spatial distribution of seasonal and monthly precipitation over Marche Region since the 1920s. *Abstract 2° Convegno Nazionale AISAM 2019.*
- Baglioni L. Lazzeri M., Pellegrini M. Sini F., Sandroni P.: Recovery, statistical validation and analysis of almost hundred-year long hydrometeorological dataset over Marche Region. *Abstract 2° Convegno Nazionale AISAM 2019.*
- Marzano F. S., Picciotti E., Barbieri S., Di Fabio S., Ronconi D., Rossi F. L., Cipollone A., Iovino A., Iocca F., Lazzeri M., Pellegrini M., Sandroni P., Sini F.: Mosaicultura interregionale di dati radar in banda X per l'osservazione di eventi estremi nell'area adriatica. *RadMet2019.*
- Toto E., Principi P. and Sini F.: Analysis of damages caused by heavy precipitation events in Marche Region (Italy). *Geophysical Research Abstracts, Vol.21, EGU2019-1652, 2019, EGU General Assembly 2019.*
- Toto E., Sini F., Massabo M. and Principi P.: The Implementation of FloodCat Platform in Marche Region (Italy) for building the regional database of flood losses and damage. *Geophysical Research Abstracts, Vol.20, EGU2018-10214, 2018, European Geosciences Union.*
- Maiello I., Ferretti R., and the AdriaX Team: The AdriaX Campaign: Meteo-Hydrological forecast and multi-radar observation in Central Adriatic. *Geophysical Research Abstracts, Vol., 2015, European Geosciences Union.*
- Tagnani C. , Sini F., Pellegrini M., GIS to evaluate hydro-geological vulnerability in Marche region, 15° Conferenza Italiana Utenti Esri, Roma 9-10 April 2014. *Supplemento al n° 2-2014 di GEOmedia - ISSN 1128-8132.*
- Sini, F., G. Boni, F. Caparrini and D. Entekhabi: Estimation of evaporation fields at regional scale based on the assimilation of remotely sensed LST. *International Workshop on the Retrieval and Use of Land Surface Temperature: Bridging the Gaps, April 7-9, 2008, NOAA NCDC, Asheville, NC.*
- Gabellani S., Giordano V., Sini F., Ferrari L. and Ferretti M.: Parsimonious distributed model applied to the Aspio urbanized small catchment. 9° Plinius Conference on Mediterranean Storms, *PLINIUS9-A-00039, September 10-13, 2007.*

Conferences / Abstracts

- Boni G, Caparrini F., Castelli F., Delogu F., Entekhabi D. and Sini F.: Mapping of soil moisture through a land temperature assimilation scheme under different surface conditions: an application to Central Italy. Geophysical Research Abstracts, Vol. 9, 11082, 2007, European Geosciences Union.
- Sini F., Caparrini F., Boni G. and Entekhabi D.: Evaporative fraction and energy fluxes estimations using multisensor satellite data: the case study of Basilicata (Southern Italy), Geophysical Research Abstracts, Vol. 8, 10868, 2006, European Geosciences Union.
- Sini F., Caparrini F., Boni G. and Entekhabi D.: Satellite data assimilation for the estimation of surface energy fluxes. Geophysical Research Abstracts, Vol. 8, 10866, 2006, European Geosciences Union.
- Gabellani S., Silvestro F., Rudari R., Sini F. and Boni G.: Using satellite retrieved data for the calibration of an hydrological model for flash flood forecast. Geophysical Research Abstracts, Vol. 8, 05776, 2006, European Geosciences Union
- Gabellani S., Silvestro F., Rudari R., Sini F. and Boni G.: Using satellite retrieved data for the calibration of an hydrological model for flash flood forecast. Geophysical Research Abstracts, Vol. 8, 05776, 2006, European Geosciences Union.
- Sini F., Boni, G. and Entekhabi D.: Soil moisture indexes monitoring over mediterranean regions using satellite data assimilation technique. 7° Plinius Conference on Mediterranean Storms, PLINIUS7-A-00077, October 5-7, 2005.
- Gabellani S., Silvestro F., Rudari R., Sini F., Boni G.: Using satellite retrieved data to improve the calibration of an hydrological model for flash flood forecast. 7° Plinius Conference on Mediterranean Storms, PLINIUS7-A-00073, October 5-7, 2005.
- Gabellani S., Silvestro F., Rudari R., Sini F., Boni G.: Using satellite retrieved data to improve the calibration of an hydrological model for flash flood forecast, Eos. Trans. AGU, 86(18), 2005, Jt. Assem. Suppl., Abstract H44B-03.
- Sini F., Boni, G. and Entekhabi D.: Satellite data assimilation for the estimation of surface energy fluxes on southern italian region. Geophysical Research Abstracts, Vol. 7, 02533, 2005, European Geosciences Union.
- Boni G; Sini F.; Entekhabi D.: Satellite data assimilation model for the estimation of surface energy fluxes on southern Italy basin. 6° Plinius Conference on Mediterranean Storms, PLC6-A-00024, October 17-24, 2004.
- Sini F., Boni, G. and Entekhabi D.: Satellite data Assimilation model for the estimation of surface energy fluxes and soil moisture related parameters. Geophysical Research Abstracts, Vol. 6, 03553, 2004, European Geosciences Union.
- Sini, F., Boni, G. and Entekhabi, D.: Land data assimilation with satellite, meteorological radar and micrometeorological measurements, for the estimation of surface energy balance components and for monitoring soil moisture content. 1° ACTIF (ACHIEVING TECHNOLOGICAL INNOVATION IN FLOOD FORECASTING) Workshop-"Accompanying Measure" of the EU the 5th Framework Programme, Bologna, November 24, 2003.

Projects

- **Piano Operativo Ambiente** – Progetto del Bilancio Idrologico Nazionale - Linea di azione 2.3.1. "Interventi per il miglioramento della qualità dei corpi idrici" - CF 2014–2020 (on-going project).
- **STREAM** - Strategic development of flood management - ID 10249186, Interreg Italy-Croatia – local project manager and steering committee member (on-going project).
- **READINESS** - Resilience Enhancement of ADRIatic basiN from firE and SeiSmic hazards - ID 10041704, Interreg Italy-Croatia – steering committee member.
- **CapRadNet**-CAPitalization and exploitation of RADar-based infrastructure and decision support system for environmental hazard management NETwork in the Adriatic and Ionian region- AdriaticIPA CBC Programme - Regione Marche "Associate" partner, local project manager.
- **PRIMES** – Preventing flooding Risks by Making resilient communitiES - LIFE14 CCA/IT/001280 - Regione Marche "associated beneficiary", technical support.
- **HOLISTIC** – Adriatic Holistic Forest Fire Protection - AdriaticIPA CBC Programme project code: 1°str/0001 - Regione Marche as "associated beneficiary", technical support and financial responsible.
- **ADRIARadNet** - ADRIatic integrated RADar-based and web-oriented information processing system NETwork to support hydro-meteorological monitoring and civil protection decision – AdriaticIPA CBC Programme project code: 2°ord/0231 - Regione Marche as "associated beneficiary"- steering committee member and financial responsible.
- **LANDSLIDE** – Landslide risk assessment model for disaster prevention and mitigation - Agreement ECHO/SUB/2014/693902-Civil Protection Financial Instrument – Regione Marche as associated beneficiary – technical support.
- **MODEX.EU 2011** – European field exercise - Telecommunications support for the Advance Medical Post with surgery module – Ossendrecht (NE).
- **GOES** - Good on emergency Situation – Grant Agreement 070401/2010/579105/SUB/C4-Civil Protection Financial Instrument – Regione Marche as associated beneficiary - financial responsible.
- **EVROS2010** – Complex Floods Management in European Union Vulnerable Areas through effective Reaction and Joint Operations Simulation in 2010- Grant Agreement 070401/2009/534328/SUB/A3-Civil Protection Financial Instrument – Regione Marche as associated beneficiary - local project manager and financial responsible.
- Remote sensing data assimilation for surface hydrological balance model integrated with Meteorological Limited Area Model - COFIN 2003 MIUR.
- "Sviluppo dei Distretti Industriali per le Osservazioni della Terra" – 0R4 research line: Remote sensing data assimilation for energy fluxes estimation – Consorzio per lo Sviluppo dei Distretti Industriali per le Osservazioni della Terra - COS(OT)
- National meteo-radar coverage (Law n° 365/2000, Ordinanza n° 3134/2001) project -CIMA-National Civil Protection Department.

## Training courses

- April - October 2021: *Evaluation of impact, usability and census of damage to public and private building after seismic events - Valutazione di impatto, agibilità e censimento dei danni alle strutture pubbliche e private in caso eventi emergenziali di tipo sismico* – LIVELLO BASE (duration:20 hours) and FORMAZIONE SPECIALISTICA PER VALUTATORI AEDES (duration: 40 hours)
- January 2021: *Safety course on rocky and snow-covered terrain - Formazione per addetti ai lavori in ambienti impervi, addestramento per la progressione su terreno roccioso e innevato - Settore ATECO "Pubblica Amministrazione" - art.37, D.Lgs.81/2008 e Accordo Stato Regioni 21.12.2011* (duration: 24 hours).
- January - March 2019: *English for users: individual training*, organised by Regione Marche training school, Italy (duration: 20 hours) – advance level.
- 13th-16th November 2018: *HSAF Products Application: soil moisture for hydrological risk management.*, organised by Eumetsat, Rome - Italy (duration: 28 hours).
- 10th-14th September 2018: *Training course on hydrological products and alert system.*, organised by National Civil Protection Department, Rome - Italy (duration: 30 hours).
- March 2018: *HEC-RAS steady flow*, organised by Ruwa Formazione S.r.l s., Italy (duration: 16 hours).
- December 2017- January 2018: *English for users: individual training*, organised by Regione Marche training school, Italy (duration: 20 hours) – upper intermediate level.
- February-March 2017: *Community planning and partnerships*, organised by Regione Marche training school, Italy (duration: 42 hours).
- September-October 2015: *European project financial reporting*, organised by Regione Marche training school, Italy (duration: 14 hours).
- September-October 2015: *Anticorruption and corporate ethics*, organised by Regione Marche training school, Italy (duration: 13 hours).
- October 2014-July 2015: *Euroenglish* – intermediate level, organised by Regione Marche training school, Italy (duration: 71 hours).
- October 2013-May 2014: *strategic European project design* held by G. Di Falco, organised by Regione Marche training school, Italy (duration: 77 hours).
- May 2013: *Fire risk course for emergency responsible-* medium risk D.LGD 81/2008 D.M. 10/03/98, organised by Regione Marche, Italy.
- 13th-22nd June 2005: *Alpine Summer School: Water-Vegetation Interactions and Biodiversity in Changing Environments*, organised by ISAC-CNR Torino, CIMA and LMD-ENS-CNRS, Valsavarenche, Italy.
- 21st-25th June 2004: *Distributed Hydrologic Modelling using Geospatial Data and Tools*, held by Prof. E. Vivoni- New Mexico Institute of Mining and Technology-"CNR- MIT Agreement for the study of Climatic Change and Hydrogeological Risk" summer school. Rome, Italy.
- February-June 2003: *Risk management* course held by F. Siccardi – University of Genoa, Italy.
- February-June 2003: *Hydrometeorology* course held by L. Ferraris – University of Genoa, Italy.
- 22nd-31st May 2003: *Remote sensing summer school-* held by P. Menzel -University of Wisconsin-USA, organised by CIMSS -CNR-IMAA –NOAA, Maratea, Italy.
- 17-20 February 2003: *Radar Hydrometeorology* held by E. Williams, MIT - "CNR-MIT Agreement for the Study of Climatic Change and Hydrogeological Risk" summer school, Assisi, Italy.
- 26<sup>th</sup> June-5th July 2002: *Grand Combin Summer School: "Physics and Predictability of Rainfall and Floods"*, organised by CNR-CIMA, Italy.

## ANNEXES

N.A.