



I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at Dipartimento di Scienze della Terra "Ardito Desio"

Scientist- in - charge: Marco Masetti

## Chiara Zuffetti CURRICULUM VITAE

### PERSONAL INFORMATION

Surname	Zuffetti
Name	Chiara
Date of birth	23, May, 1990

### PRESENT OCCUPATION

Appointment	Structure
-	-

### EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement
PhD	Earth Sciences	Università degli Studi di Milano	2019
Master	Earth Sciences	Università degli Studi di Milano	2015

### FOREIGN LANGUAGES

Languages	level of knowledge
Italian	Native speaker
English	Proficient user
French	Basic user

### AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2019	Award. INQUA-International Quaternary travel grant, awarded for the International Summer School on Active Tectonics and Tectonic Geomorphology (Prague-CZ)
2019	Award. Best poster presented by Early Career Scientists at IAS Meeting of Sedimentologists (Rome-IT)
2019	Award. "Ricchetti" Award - Special mention for the best talks of Early Career Scientists at GIT Congress (Melfi-IT)
2019	Award. "David Giuntini" Scientific Award for the best PhD Thesis (Marina di Massa-IT)
2017	Award. IAS-International Association of Sedimentologists travel grant, awarded for the 11th



	International Conference on Fluvial Sedimentology (Calgary-CANADA)
2017	Scholarship <i>Swiss-European Mobility Programme</i> as visiting PhD Student at the Centre d'hydrogéologie et de géothermie (Neuchatel-CH). Duration of funding: Feb-July 2017
2015	Scholarship provided by <i>Italian Ministry of Education, University and Research (MIUR)</i> for PhD program in Earth Sciences at Dipartimento di Scienze della Terra 'A. Desio' (Milano-IT)

## TRAINING OR RESEARCH ACTIVITY

**Nov 2018-present at Dipartimento di Scienze della Terra "A. Desio" - Università degli Studi di Milano:**

### Research collaborator

**Activity:** develop a novel geo-modelling workflow integrating spatial geological information with descriptive constraints derived from the geological knowledge, through the formalization of the latter into numerical modelling rules (Zuffetti et al., *submitted*); refine the morpho-tectonic interpretation on the origin of the palimpsest landscape at the Po Plain-Apennines border (Lombardy-IT), proposed during my PhD, and finalize it into a new publication (Zuffetti & Bersezio, *submitted*).

### Attended courses:

- International Summer School on Active Tectonics and Tectonic Geomorphology. Organizer: INQUA-International Quaternary Organization-Commission on Terrestrial Processes. Venue: Prague-CZ. 24-27/09/2019

**Feb 2017-Jul 2017 at Centre d'hydrogéologie et de géothermie - Université de Neuchâtel-CH:**

### Visiting PhD Student

**Activity:** training on 3D geological modelling techniques in the Research group led by Prof. Philippe Renard. **Major topics:** 3D geo-modelling (GeoModeller software), GIS data management (ArcGis, QGis)

### Attended courses:

- Reservoir property modeling using MPS and advanced geostatistics. Teachers: P. Renard, J. Straubhaar, A. Boucher. Venue: CHYN Centre, University of Neuchatel-CH. 23-25/06/2017
- Environmental tracers. Teachers: P. Cook, R. Kipfer, D. Hunkeler. Venue: Emmental research site of the CHYN Centre, Bern Canton-CH. 31/05-02/06/2017
- Reservoir Modelling. Teachers: P. Renard, P. Brunner. Venue: CHYN Centre, University of Neuchatel-CH. 05/2017
- Modelling of flow and transport processes. Teachers: P. Perrochet, G. Preisig. Venue: CHYN Centre, University of Neuchatel-CH. 04/2017

**Oct 2015-Oct 2018 at Dipartimento di Scienze della Terra "A. Desio" - Università degli Studi di Milano:**

### PhD Student

Thesis title: *Characterization and modelling of complex geological architectures: The Quaternary fill of the Po Basin at the Po Plain-Apennines border (Lombardy, Italy)*. Supervisor: Prof R. Bersezio; co-supervisor: Dr. A. Comunian, PhD.

**Activity:** the research project aimed to develop geological, architectural and hydrostratigraphic models of the Quaternary sedimentary fill at the Po Plain-Northern Apennines border in Lombardy. The specific purpose was to elaborate the architectural and evolutionary model in a complex tectono-stratigraphic setting, by integrating field/subsurface data and interpretations of the geological evolution (Zuffetti et al., 2018a, 2018b, 2018c). Focus was on the bearings of multiscale stratigraphic and structural complexity on 3D geological models, by investigating the relationships between the features of the 4D geological reconstructions (descriptive "soft" data and geometrical "hard" models) and the corresponding modelled architectures at different scales. **Major topics:** Quaternary geology, Geological mapping, Geomorphology, Geopedology, GIS, 3D geo-modelling, (hydro-) Stratigraphy.

**Field experience:** Geological and geomorphological mapping and detailed pedo-stratigraphic descriptions in the southern Po Basin of Lombardy-IT.



## Some attended courses/workshops:

- Workshop on GeoModeller coupling to FeFlow software. Teachers: H. Gibson, G. Courrioux, B. Kaiser. Venue: BRGM Headquarters, Orléans-FRA. 19-20/02/2018
- Seismic interpretation and static geological modelling in Petrel© of carbonate reservoirs. Teacher: B. Platov. Venue: DST; Università degli Studi di Milano-IT. 7-9/11/2017.
- Geological Field course. Teachers: M. Ghinassi, E. Capezzuoli. Venue: Apennines of Tuscany and Umbria regions-IT. 16-18/06/2017
- Geological Field course. Teacher: F. Jadoul. Venue: eastern Sardinia-IT. 14-20/05/2017
- 3D modelling and visualization of sedimentological and stratigraphic data through commercial software: surface and subsurface case-studies. Teacher: M. Marini. Venue: DST, Università degli Studi di Milano-IT. 06-09/06/2016
- Workshop on advances in sequence stratigraphy. Organizer: GeoSed-Italian Association of Sedimentary Geology. Venue: Potenza-IT. 5-6/05/2016
- GIS© and GeoModeller©: 3-D analysis and modelling of geological structures. Teacher: E. Cavalli. Venue: DST, Università degli Studi di Milano-IT. 14-18/12/2015
- Communicate the Geosciences. Teacher: L. Bignami. Venue: DST, Università degli Studi di Milano-IT. 1-6/10/2015

## **May 2015-Sep 2015 at Dipartimento di Scienze della Terra "A. Desio" - Univ. degli Studi di Milano: Research collaborator**

Activity: implementation of the "S.I.L.L.A.R.O" GIS Geo-Database, hosted by the DST, Università degli Studi di Milano; refinement of regional stratigraphic correlations of the subsurface Quaternary succession of the Po Basin, focusing on cross-sections between Lambro-Adda rivers, Lodi plain of Lombardy.

## **2013-2014 at GeoArbor Studio - Basiano-IT:**

**Apprentice geologist** under the supervision of Dr. Geol. C. Leoni (GeoArbor Studio).

Activity: Execution and interpretation of geological engineering surveys; writing of geotechnical reports; GIS management and implementation of geological and hydrological geo-Database. 150 hours.

## **PROJECT ACTIVITY**

Year	Project
2019	Cooperation on the project " <i>Sedimentary basins through time: investigating stratigraphic architecture and controlling factors of depositional systems</i> ". Project leader: Dr. M. Marini, PhD - Università degli Studi di Milano; funding: PSR2019_MMARINI. <u>Activity:</u> geological field surveys on turbidite complexes in Tachrift District (Morocco), including detailed sedimentological description, execution of stratigraphic logs and stratigraphic correlations.
2019	Cooperation on the project " <i>Modellazione dell'eterogeneità dei sistemi idrostratigrafici ed idrologici con metodi geofisici e geostatistici: approcci gerarchici e multi-scala</i> ". Project leader: Dr. A. Comunian, PhD - Università degli Studi di Milano; funding: PSR2019_ACOMUNIAN. <u>Activity:</u> development of a modelling workflow formalizing hierarchy and chronology of the stratigraphic units as explicit modelling rules; integration GIS and GeoModeller software.
2018	Cooperation on the project " <i>Caratterizzazione dell'eterogeneità idrostratigrafica con metodi geofisici e geostatistici: approcci gerarchici e multi-scala</i> ". Project leader: Dr. A. Comunian, PhD - Università degli Studi di Milano; funding: PSR2018_ACOMUNIAN. <u>Activity:</u> geological mapping and geophysical surveys in the Southern Po Plain of Lombardy (Italy) to constrain the subsurface 2D and 3D reconstructions of the Quaternary stratigraphy.
2014	Cooperation in the <i>Preliminary Mission for hydroelectric power plants on Ruvubu and Ndurumu rivers</i> , in Gitega, Ngozi and Karuzi districts (Burundi), with italian Onlus VISPE. Team leader: Dr. Geol. C. Leoni - VISPE, GeoArbor Studio. <u>Activity:</u> field assistance in the execution of preliminary geognostic surveys, implementation of GIS geological and hydrological Geo-DB.



## CONGRESSES AND SEMINARS

Date	Title	Place
16-19/09/2019	Congress of SGI-SIMP-SOGEI - Italian Geological Society	Parma-IT
10-13/09/2019	34 <sup>th</sup> IAS International Meeting of Sedimentology	Roma-IT
25-31/08/2019	INQUA Congress - International Quaternary	Dublin-IRE
17-19/06/2019	14 <sup>th</sup> Congress of GIT - Geosciences and Information Technologies	Melfi-IT
30/12/2018	Incontri di Geologia GeoSed 2018 - Italian Association of Sedimentary Geology	Roma-IT
13-14/06/2018	Il Quaternario: passato, presente, futuro - AIQUA	Firenze-IT
18-23/02/2018	4 <sup>th</sup> Meeting of the European 3D Geomodelling Community	Orléans-FRA
30/12/2017	Incontri di Geologia GeoSed 2017 - Italian Association of Sedimentary Geology	Roma-IT
17-21/07/2017	11 <sup>th</sup> International Conference on Fluvial Sedimentology - ICFS11	Calgary-CAD
16-20/06/2017	Meeting GeoSed	Perugia-IT
08/05/2017	PhD Congress 2017	Neuchatel-CH
01/04/2017	CH-QUAT Annual Meeting	Neuchatel-CH
06/03/2017	Internal seminar at the Centre of Hydrogeology and Geothermics UniNE. <i>Invited talk</i>	Neuchatel-CH
1-2/12/2016	Incontri di Geologia GeoSed 2016 - Italian Association of Sedimentary Geology	Roma-IT
27-30/09/2016	Rain Rivers Reservoir Conference	Edinburgh-UK
16-17/06/2016	Geocronologia e Cronostratigrafia del Quaternario, Luci e Ombre - AIQUA	Bologna-IT
5-6/5/2016	The Italian Sedimentologists meet Ronald Steel, 2-days workshop - Italian Association of Sedimentary Geology	Potenza-IT
23-28/04/2016	EGU General Assembly - European Geosciences Union	Wien-A

## PUBLICATIONS

## Books/Thesis

Zuffetti C. Characterization and modelling of complex geological architectures: The Quaternary fill of the Po Basin at the Po Plain-Apennines border (Lombardy, Italy). *PhD Thesis*. Dipartimento di Scienze della Terra, Università degli Studi di Milano. 2019

## Articles in reviews

*Submitted: Zuffetti, C., Comunian, A., Bersezio, R., Renard, P. Hyegeo: a novel Python module to model geological architectures, constrained by stratigraphic hierarchy and chronology. 2019*

*Submitted: Zuffetti, C., Bersezio, R. Morphostructural evidences of Late Quaternary tectonics at the Po Plain-Northern Apennines border (Lombardy, Italy). 2019*

1. Zuffetti, C., Trombino, L., Zembo, I., Bersezio, R. Soil evolution and origin of landscape in a late Quaternary tectonically mobile setting: the Po Plain-Northern Apennines border in Lombardy (Italy). *Catena*, 171, 376-397. 2018a
2. Zuffetti, C., Bersezio, R., Trombino, L. Significance of the morphological and stratigraphic surfaces in the Quaternary Po Plain: The San Colombano tectonic relief (Lombardy, Italy). *Alpine and Mediterranean Quaternary*, 31, 257-260. 2018b





3. Zuffetti, C., Bersezio, R., Contini, D., & Petrizzo, M. R. Geology of the San Colombano hill, a Quaternary isolated tectonic relief in the Po Plain of Lombardy (Northern Italy). *Journal of Maps*, 14(2), 199-211. 2018c

## Congress proceedings

1. Zuffetti, C., Bersezio, R. Late Quaternary sedimentation and tectonics in the Po Basin: field evidences at the Po Plain-Apennines border (Lombardy). In B. Carmina, F.M. Petti, G. et al. (Eds). Abstracts of SGI-SOCIETÀ GEOLOGICA ITALIANA CONGRESS (p. 500). Parma-IT. 2019
2. Mele, M., Zuffetti, C., Aliverti Piuri, E., Bersezio, R., Giudici, M., Comunian, A., Contini, D. Geophysical imaging of a buried faulted anticline: The San Colombano hill, southern Po Plain of Lombardy (Northern Italy). In B. Carmina, F.M. Petti, G. et al. (Eds). Abstracts of SGI-SOCIETÀ GEOLOGICA ITALIANA CONGRESS (p. 488). Parma-IT. 2019
3. Zuffetti, C., Bersezio, R. Effects of Late Pleistocene synsedimentary tectonics on alluvial architecture at the Po Plain-Apennines border (N-Italy). Abstracts of the 34<sup>TH</sup> IAS-INTERNATIONAL ASSOCIATION OF SEDIMENTOLOGISTS MEETING. Rome-IT. 2019
4. Zuffetti, C., Bersezio, R. Deciphering palimpsest landscapes to constrain 3D(4D) geological models: an example from the Po Plain-Apennines border (N Italy). Abstracts of 20<sup>TH</sup> INQUA-INTERNATIONAL QUATERNARY CONGRESS. Dublin-IRE. 2019
5. Zuffetti, C., Bersezio, R., Comunian, A. Modelling complex tectono-sedimentary architectures at the southern margin of the Quaternary Po Basin (Italy). Abstracts of the 14<sup>TH</sup> GIT-GEOINFORMATICS AND INFORMATION TECHNOLOGIES CONGRESS. Melfi-IT. 2019
6. Zuffetti, C., Bersezio, R., Comunian, A., Cavalli, E., Renard, P. Geological constraints to model complex hydrostratigraphy: case studies from the Quaternary Po Hydrogeological Basin (Northern Italy). Abstracts of the 4<sup>TH</sup> MEETING ON 3D GEOLOGICAL MODELLING. BRGM. Orléans-FRA. 2018
7. Zuffetti, C., Bersezio, R., & Cavalli, E. Aquifer-building processes. Unravelling allogenic controls to constrain 3D models of the Quaternary alluvial architecture in the Central Po Plain (Italy). In S. Hubbard, P. Durkin et al. (Eds). Abstracts of ICFS-INTERNATIONAL CONGRESS ON FLUVIAL SEDIMENTOLOGY (pp. 127-128). Calgary-CAD. 2017
8. Zuffetti, C. Quaternary hydrostratigraphy in the Po Plain: multiscale geology and forward modelling. Abstracts of the PHD CONGRESS 2017. CHYN, Neuchatel-CH. 2017
9. Bersezio, R., Zuffetti, C., Cavalli, E., Baio, M., Cantone, M., Inzoli, S., Pavia, F., Rigato, V., Rusnighi, Y., Rodondi, C., Sozzi, S. The Quaternary N-Apennine tectonics recorded in the Po Basin: stratigraphic and geomorphological evidences along a N-S traverse in Lombardy (Italy). Geophysical Research Abstracts, 18 (EGU2016-9228). EGU-EUROPEAN GEOSCIENCES UNION. Wien-A. 2016

## OTHER INFORMATION

### Technical skills

- Full knowledge of Windows platform (Xp, Vista, 7) and OS; Good command Adobe Suite (Illustrator, Photoshop); Good command on multimedia systems
- Excellent control of ArcGis® suite (Esri) for map production, multi-scale stratigraphic reconstructions, quantitative morpho-tectonic analyses, Tool creation; proven ability to plan, implement and manage GIS-based hierarchic geo-Databases, combining surface and subsurface geological datasets
- Proficient user of GeoModeller® (Intrepid Geophysics) for 3D stratigraphic and structural elaborations

### Communication skills

Good communication skills gained through my experience as: i) teaching collaborator at the University and in other contexts (e.g. High Schools); ii) researcher (e.g. presentation at international conferences and informal scientific dissemination); iii) educator and volunteer in different Countries (communication in very heterogeneous and culturally-variable teams)



## TEACHING and ACADEMIC EXPERIENCE

*Università degli Studi di Milano, Dipartimento di Scienze e Politiche Ambientali - Milano-IT*

- **Adjunct Professor.** Coordinator of the course **BASICS OF EARTH SCIENCES**, BSc in Environmental Sciences and Politics. 80 hours.  
Major topics: Cartography, Earth systems and dynamics, Geomorphology, Minerals and Rocks, Stratigraphy (Semester Feb 2019-Jul 2019)

*Università degli Studi di Milano, Dipartimento di Scienze della Terra - Milano-IT*

- **Lecturer Assistant** (Integrated didactic activity under art. 45). Practical session of the course **INTRODUCTORY GEOLOGY** (Coordinator: Prof. E. Erba), BSc in Geological Sciences. 18 hours/A.A. Major topics: Cartography, Geomorphology, Geological mapping (A.A 2017-18)
- **Field tutor** in the course **FIELD GEOLOGY** (Coordinators: Prof. R. Bersezio, Prof. P. Tartarotti), BSc in Geological Sciences. Major topics: Geomorphology, Geological field survey (AA. 2016-17 and 2017-18)
- **Lecturer Assistant** (Integrated didactic activity under art. 45). Practical session of the course **INTRODUCTORY GEOLOGY** (Coordinator: Prof. E. Erba), BSc in Geological Sciences. 18 hours/A.A. Major topics: Cartography, basics of Geomorphology and Geological fieldwork (AA. 2016-17)
- **Co-examiner** of 1 MSc Thesis in Earth Sciences (Advisor: Prof. M. Zucali). Topic: 3D geological modelling in the Southern Alps of Lombardy (AA. 2017-18)
- **Exam Committee Member** of the course **HYDROSTRATIGRAPHY, AQUIFER SEDIMENTOLOGY AND PRACTICAL** (Coordinator: Prof. R. Bersezio), MSc in Earth Sciences. (AA. 2015-16 to 2017-18)
- **Co-advisor** of 8 BSc Theses in Geological Sciences and 1 MSc Thesis in Earth Sciences and Member of the related Degree Boards. Major topics: Surface geology; Geomorphology; Alpine-sourced alluvial systems; Quaternary Apennine tectonics and its influence on subsurface stratigraphic architecture; GIS-based Geo-Database management; Po Plain of Lombardy; Northern Apennines; 3D geo-models (AA. 2015-16 to 2018-19)
- **PhD Students Representative** (AA.2015-16 to 2017-18)

## MEMBERSHIPS

International Association of Sedimentologists (IAS; 2017-present); Geological Society of Italy - Section of Sedimentary Geology (SGI-GeoSed; 2016-present); International Union for Quaternary Research (INQUA; 2018-present); Italian Association for Quaternary Research (AIQUA; 2016-present)

## “THIRD MISSION”

- Co-founder and member of the cultural organization *Terra in vi(s)ta* at Dipartimento di Scienze della Terra “A. Desio”-Università degli Studi di Milano-IT, promoting dissemination of Earth Sciences through any form of art (2019-present)
- Cooperator at the European Scientific Events *Meet-me-tonight* in Milan-IT (2015-2019)
- Invited teacher to Earth Sciences classes at high school *Liceo G. Gandini* in Lodi-IT (2017)
- Invited speaker in public seminars on the hydrocarbon resources of Italy, in preparation for the Italian Referendum on oil and natural gas drilling - Lodi-IT (2016)
- Co-organizer of Open-Days for high-school students, Università degli Studi di Milano-IT (2015-2016)
- University curriculum counsellor for high school students in Lodi-IT (2014-2016)

## VOLUNTARY WORK

- Educator and National Cooperator (2015-present) with *AGESCI*, Red Cross, *Libera Terra* organizations
- International Cooperator in projects aimed at the development of rural areas, local resources and education in Bihać (BOSNIA; 07/2017) with the NGO *Terre e Libertà-IPSIA*; Puka district (ALBANIA; 2008-2017) with *Miredita* organization; Karuzi province (BURUNDI; 02/2014) with *VISPE* Onlus; Jambiani (TANZANIA; 08/2009) with the NGO *Movimento Lotta contro la fame nel Mondo-MLFM*



Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Place and date: Milano, 27/12/2019

SIGNATURE

