

CURRICULUM VITAE ET STUDIORUM: Dr. Luigi Bruno

Personal data: Born in Terlizzi (BA), 04/07/1980

Present Position: Associate Professor

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EDUCATION

- **March 2009** Degree in Geological Sciences (summa cum laude) at the University of Bologna with a thesis entitled '*Geological and structural survey along the Mattinata fault, Gargano Promontory, southern Italy*', under the supervision of Prof. Luigi Selli.
- **October 2010** Degree in Geology and Territory (summa cum laude) at the University of Bologna with a thesis entitled '*Stratigraphy and facies analysis of Quaternary deposits in the urban area of Bologna, northern Italy*', under the supervision of Prof. Alessandro Amorosi.
- **April 2014** Ph.D. in Earth Sciences at the University of Bologna with a thesis entitled '*Palaeosol-based stratigraphy of Late Quaternary deposits from the Po Basin, between Bologna and the Po River (Northern Italy)*' under the supervision of Prof. Alessandro Amorosi.

PREVIOUS POSITIONS AND FELLOSHIPS

- **From January 2014 to November 2018.** Postdoctoral position at the University of Bologna.
- **From December 2018 to November 2021.** Researcher at the University of Modena and Reggio Emilia.

VISITS AND STAYS

- **September 2018** Visiting scientist at Utrecht University;
- **July 2018** Visiting scientist at ETH, Zurich;
- **February-May 2013** Visiting PhD student at ETH, Zurich;
- **February-May 2012** Visiting PhD student at ETH, Zurich.

BRIEF DESCRIPTION OF THE RESEARCH ACTIVITY

- Quaternary stratigraphy and sedimentology. Reconstruction of late Quaternary alluvial and coastal sedimentary processes and events, through subsurface investigation and core analysis. Paleogeographic and paleoenvironmental evolution of alluvial and coastal plains. Influence of the structural setting on sedimentation in tectonically active areas. Paleosol stratigraphy of Late Pleistocene and Holocene alluvial successions. Geoarcheology of Middle-Late Holocene deposits and mutual influence between human activity and sedimentary processes. Quantification of sedimentary processes in source-to-sink systems, calculation of volumes and sedimentation rates.

MAJOR COLLABORATIONS AND RESEARCH PROJECTS

- Source-to-sink study of the Po-Adriatic System, in collaboration with the Upstream Research Group of ExxonMobil and Institute of Marine Sciences (ISMAR) of the National Research Council (CNR).
- Evaluation of the liquefaction hazard in the central Po Plain. Research project promoted by Regione Lombardia in the framework of EU Project "GeoMol" Alpine Space Program, in collabo-

ration with Mantova and Cremona County Administrations, National Research Council-IDPA and the University of Bologna.

- Calculation of compaction of Late Pleistocene and Holocene sediments and its influence on strata deformation. In collaboration with the University of Utrecht.
- Impact of recent tectonic on Late Quaternary strata deformation. In collaboration with ETH of Zurich.
- PRIN 2017 (MIUR): “The Po-Adriatic Source-to-Sink system (PASS): from modern sedimentary processes to millennial-scale stratigraphic architecture”. PI: Prof. A. Amorosi (Università di Bologna).
- “Rilevamento stratigrafico per la valutazione della pericolosità sismica locale in aree test della pianura ferrarese e ravennate”. Progetto finanziato da Regione Emilia-Romagna. Ruolo: Responsabile del Work Package WP1: “Analisi stratigrafica”. PI: Prof. Alessandro Amorosi (Università di Bologna).
- Progetto CARG, Foglio 184 della Carta Geologica d’Italia alla scala 1:50.000. Ruolo: co-coordinatore.

SUPERVISION OF PhD STUDENTS AND POSTDOCTORAL FELLOWS

- **2016-2019.** Co-supervisor of the Ph.D. Student, Dr. Bianca Costagli working on a thesis entitled ‘*Deformed stratigraphic markers in the shallow subsurface of the Po Plain. Possible indicators of tectonic activity?*’. PhD program in Earth, Life and Environmental Sciences (STVA), University of Bologna.
- **2020-2021.** Supervisor of the PhD Student Luca Demurtas working on a thesis entitled ‘*Sedimentary architecture and evolution of the central Po Plain through integrated stratigraphic and petrographic analyses.* PhD course in Models and Methods for Material and Environmental Sciences (M3ES), University of Modena and Reggio Emilia.

ACTIVITIES IN REFERRED SCIENTIFIC JOURNALS.

Guest Editor of the Special Issue: “*Quaternary Stratigraphy of Alluvial and Coastal Plains: Recent Advances and Potential Applications*”. **Geosciences** (ISSN 2076-3263).

Review activity for:

- Palaeogeography, Palaeoclimatology, Palaeoecology
- Quaternary Science Review
- Sedimentology
- Basin Research
- Marine Geodesy
- Environmental Earth Sciences
- Catena
- Sedimentary Geology

BIBLIOMETRIC INDICATORS (Source: Scopus) AND SCIENTIFIC PRODUCTION

Total number of publications in scientific journals: 26

Total number of book chapters: 1

Total number of other publications: 3

Total number of citations: 383

h-index: 11

Average number of citations per publication: 13.7

Average number of citations per year: 47.9

LIST OF SCIENTIFIC PUBLICATIONS ON INTERNATIONAL JOURNALS WITH IF.

1. Lugli, F., Cipriani, A., Bruno, L., Ronchetti, F., Cavazzuti, C., Benazzi, S. *A strontium isotope of Italy for provenance studies*. **Chemical Geology**, 587, 120624.
2. Amorosi, A., Bruno, L., Cacciari, M., Campo, B., Rossi, V. *Tracing marine flooding surface equivalents across freshwater peats and other wetland deposits by integrated sedimentological and pollen data* **International Journal of Coal Geology**, 2021, 246, 103830.
3. Amorosi, A., Bruno, L., Campo, B., Di Martino, A., Sammartino, I. *Patterns of geochemical variability across weakly developed paleosol profiles and their role as regional stratigraphic markers (Upper Pleistocene, Po Plain)*. **Palaeogeography, Palaeoclimatology, Palaeoecology**, 2021, 574, 110413.
4. Bruno, L., Amorosi, A., Lugli, S., Sammartino, I., Fontana, D. *Trunk river and tributary interactions recorded in the Pleistocene–Holocene stratigraphy of the Po Plain (northern Italy)*. **Sedimentology**, 2021.
5. Rossi, V., Barbieri, G., Vaiani, S.C., Cacciari, M., Bruno, L., Campo, B., Marchesini, M., Marvelli, S., Amorosi, A.; *Millennial-scale shifts in microtidal ecosystems during the Holocene: dynamics and drivers of change from the Po Plain coastal record (NE Italy)*. **Journal of Quaternary Science**, 2021.
6. Amorosi, A., Bruno, L., Campo, B., Costagli, B., Picotti, V., Vaiani, S.C.; *Deformation patterns of upper Quaternary strata and their relation to active tectonics, Po Basin, Italy*. **Sedimentology** (2021), 68(1), 402–424.
7. Campo, B., Bruno, L., Amorosi, A.; *Basin-scale stratigraphic correlation of late Pleistocene–Holocene (MIS 5e – MIS 1) strata across the rapidly subsiding Po Basin (northern Italy)*. **Quaternary Science Review** (2020) 237, 106300, DOI: 10.1016/j.quascirev.2020.106300.
8. Bruno, L., Marchi, M., Bartolini, I., Gottardi G., Amorosi, A.; *Climate control on stacked paleosols in the Pleistocene of the Po Basin (northern Italy)*. **Journal of Quaternary Research** (2020), 35/4, 559-571, DOI: 10.1002/jqs.3199.
9. Cacciari, M, Amorosi, A, Marchesini, M, Kaniewski, D, Bruno L, Campo, B and Rossi, V.; *Linking Holocene vegetation dynamics, palaeoclimate variability and depositional patterns in coastal successions: Insights from the Po Delta plain of northern Italy*. **Palaeogeography Palaeoclimatology Palaeoecology** (2020), 538, 109468, DOI: 10.1016/j.palaeo.2019.109468
10. Amorosi, A., Bruno, L., Campo, B., Costagli, B., Dinelli, E., Sammartino, I., Hong, W., Vaiani, S.C.; *Tracing clinothem geometry and sediment pathways in the prograding Holocene Po Delta system through integrated core stratigraphy*. **Basin Research** (2020), 32, 206-215, DOI: 10.1111/bre.12360.
11. Amorosi, A., Barbieri, G., Bruno, L., Campo, B., Costagli, B., Dinelli, E., Sammartino, I., Hong, W., Vaiani, S.C.; *Three-fold nature of coastal progradation during the Holocene eustatic highstand, Po Plain, Italy – close correspondence of stratal character with distribution patterns*. **Sedimentology** (2019), 66, 3029-3052, DOI: 10.1111/sed.12621.
12. Bruno, L.; Campo, B.; Di Martino, A.; Hong, W; Amorosi, A.; *Peat layer accumulation and post-burial deformation during the mid-late Holocene in the Po coastal plain (Northern Italy)*. **Basin Research** (2019), 31 (3), 621-639, DOI: 10.1111/bre.12339.
13. Giacomelli, S., Rossi, V., Amorosi, A., Bruno, L., Campo, B., Ciampalini, A., Civa, A., Hong, W., Sgavetti M., de Souza Filho, C.R.; *A mid late Holocene tidally-influenced drainage system revealed by integrated remote sensing, sedimentological and stratigraphic data*. **Geomorphology** (2018), 318, 421-436, DOI: 10.1016/j.geomorph.2018.07.004.
14. Cacciari, M., Rossi, V., Marchesini, M., Amorosi, A., Bruno, L., Campo, B.; *Palynological characterization of the Po delta succession (northern Italy): Holocene vegetation dynamics,*

- stratigraphic patterns and palaeoclimate variability. Alpine and Mediterranean Quaternary* (2018), 31/1, 109-112. DOI: 10.26382/AIQUA.2018.AIQUAconference.
15. Bruno, L., Piccin, A., Sammartino, I., Amorosi, A.; *Decoupled geomorphic and sedimentary response of Po River and its Alpine tributaries during the last glacial/post-glacial episode. Geomorphology* (2018), 317, 184-198. DOI: 10.1016/j.geomorph.2018.05.027.
 16. Bruno, L., Bohacs, K.M., Campo, B., Drexler, T.M., Rossi, V., Sammartino, I., Scarponi, D., Hong, W., Amorosi, A.; *Early Holocene transgressive paleogeography in the Po coastal plain (Northern Italy). Sedimentology* (2017), 64/7, 1792-1816. DOI: 10.1111/sed.12374.
 17. Amorosi, A., Bruno, L., Campo, B., Morelli, A., Rossi, V., Scarponi, D., Hong, W., Bohacs, K.M., Drexler, T.M.; *Global sea-level control on local parasequence architecture from the Holocene record of the Po Plain, Italy. Marine and Petroleum Geology* (2017), 87, 99-111. DOI: 10.1016/j.marpetgeo.2017.01.020.
 18. Morelli, A., Bruno, L., Cleveland, D.M., Drexler, T.M., Amorosi, A.; *Reconstructing Last Glacial Maximum and Younger Dryas paleolandscapes through subsurface paleosol stratigraphy: An example from the Po coastal plain, Italy. Geomorphology* (2017), 295, 790-800. DOI: 10.1016/j.geomorph.2017.08.013.
 19. Bruno, L., Amorosi, A., Severi., Costagli, B.; *Late Quaternary aggradation rates and stratigraphic architecture of the southern Po Plain, Italy. Basin Research* (2017), 29/2, 234-248. DOI: 10.1111/bre.12174.
 20. Amorosi, A., Bruno, L., Cleveland, D.M., Morelli, A., Hong, W.; *Paleosols and associated channel-belt sand bodies from a continuously subsiding late Quaternary system (Po Basin, Italy): New insights into continental sequence stratigraphy. Geological Society of America Bulletin* (2017), 129/3-4, 449-463. DOI: 10.1130/B31575.1.
 21. Amorosi, A.; Bruno, L., Facciorusso, J., Sammartino, I., Piccin, A., *Stratigraphic control on earthquake-induced liquefaction: A case study from the Central Po Plain (Italy). Sedimentary Geology* (2016), 345, 42-53. DOI: 10.1016/j.sedgeo.2016.09.002.
 22. Campo, B., Amorosi, A., Bruno, L.; *Contrasting alluvial architecture of late Pleistocene and Holocene deposits along a 120-km transect from the central Po Plain (northern Italy). Sedimentary Geology* (2016), 341, 265-275. DOI: 10.1016/j.sedgeo.2016.04.013.
 23. Amorosi, A., Bruno, L., Campo, B., Morelli, A.; *The value of pocket penetration tests for the high-resolution paleosol stratigraphy of late Quaternary deposits. Geological Journal* (2015), 50, 670-682. DOI: 10.1002/gj.2585.
 24. Bruno, L., Amorosi, A., Severi., P., Bartolomei, P.; *High-frequency depositional cycles within the late Quaternary alluvial succession of Reno River (northern Italy). Italian Journal of Geosciences* (2015), 134, 339-354.
 25. Amorosi, A., Bruno, L., Rossi, V., Severi., P., Hajdas, I.; *Paleosol architecture of a late Quaternary basin-margin sequence and its implications for high-resolution, non-marine sequence stratigraphy. Global and Planetary Change* (2014), 112, 12-25. DOI: 10.1016/j.gloplacha.2013.10.007.
 26. Bruno, L., Amorosi, A., Severi., P., Curina, R., Bitelli, R.; *Human-landscape interactions in the Bologna area (Northern Italy) during the mid-late Holocene, with focus on Roman period. The Holocene* (2013), 23, 1560-1571. DOI: 10.1177/0959683613499054.

BOOK CHAPTERS AND CONFERENCE PROCEEDINGS

1. Bruno, L., Campo, B., Costagli, B., Stouthamer, E., Teatini, P., Zoccarato, C., Amorosi, A. *Factors controlling natural subsidence in the Po Plain*. Proc. IAHS, 382, 285–290, 2020 <https://doi.org/10.5194/piahs-382-285-2020>.
2. Campo, B., Morelli, A., Amorosi, A., Bruno, L., Scarponi, D., Rossi, V., Bohacs, K.M., Drexler, T.M. *Last-Glacial-Maximum Depositional Sequence, Upper Pleistocene to Holocene, Po Plain Italy*. In AAPG Memoir (ISSN: 0271-8521) “*Sequence Stratigraphy-Application to Mudstones*”, (2019), in press.
3. Amorosi, A., Bohacs, K.M., Bruno, L., Campo, B., Drexler, T.M. *How close is geological thought to reality? The concept of time as revealed by the sequence stratigraphy of the late Quaternary record*. (<https://doi.org/10.5724/gcs.17.047>) In Hart, B., Rosen, N.C., West, D., D’Agostino, A., Messina, C., Hoffman, M. & Wild, R. (Eds.), *Sequence Stratigraphy: The Future Defined* (ISSN: 1060-071X). 2019 SEPM Gulf Coast Section Publications, pp. 47-86.
4. Marchi, M, Bertolini, I, Gottardi, G, Amorosi, A, Bruno, L. *From geological and historical data to the geotechnical model of the Two Towers in Bologna (Italy)*. Proceedings of the XVII ECSMGE-2019 Geotechnical Engineering foundation of the future (ISBN 978-9935-9436-1-3), 2019 doi: 10.32075/17ECSMGE-2019-0269.

POSTERS AND ORAL PRESENTATIONS

Bruno, L., Amorosi, A., Demurtas L., Lugli, S., Fontana, D., Sammartino, I.
Trunk river and tributary interactions and implications for coarse vs fine-grained sediment storage in the Po alluvial basin (northern Italy).
90 Congresso della Società Geologica Italiana, 14-16 September 2021

Bruno L., Campo B., Amorosi A.
Late Pleistocene-Holocene evolution of the Po River mouth (virtual fieldtrip).
ICFS 2021 virtual meeting, 14-15 July 2021

Bruno L., Campo B., Costagli B., Amorosi A.
Holocene sedimentary evolution of the Po coastal plain (northern Italy) and its relations with differential subsidence.
IAS – 34th Meeting of Sedimentology, 21st-25th June 2021, Prague (online).

Campo B., Bruno L., Amorosi A.
Characterizing late Quaternary paralic to shallow-marine facies associations through piezocone penetration tests (Po Basin, Italy).
IAS – 34th Meeting of Sedimentology, 21st-25th June 2021, Prague (online).

Rossi V., Barbieri G., Vaiani S.C., Cacciari M., Bruno L., Campo B., Marchesini M., Marvelli S., Amorosi A.

Holocene environmental dynamics of microtidal paralic systems: a multi-proxy record from the Po coastal plain.

IAS – 34th Meeting of Sedimentology, 21st-25th June 2021, Prague (online).

Bruno L.

From a river- to a man-dominated environment. Insights from the geo-archaeological record of Bologna (northern Italy)

EGU - European Geosciences Union - General Assembly, 19th-30th April 2021, Vienna (online).

Bruno L., Marchi M., Bertolini, I. Gottardi, G. Amorosi, A.

Climate control on Late Pleistocene paleosols in the Po Basin (northern Italy).

IAS – 34th Meeting of Sedimentology, 10th-13th September 2019, Rome.

Campo B., Bruno L., Costagli B., Dinelli E., Hong W., Sammartino I., Vaiani S.C., Amorosi A.

Unconventional sub-seismic stratigraphic approach to reveal clinothem boundaries in the mud-prone Holocene Po Delta system.

IAS – 34th Meeting of Sedimentology, 10th-13th September 2019, Rome.

Marchi M, Bertolini I, Gottardi G, Amorosi A, Bruno L.

From geological and historical data to the geotechnical model of the Two Towers in Bologna (Italy).

ECSMGE - XVII European Conference on Soil Mechanics and Geotechnical Engineering, 1st-6th September 2019, Reykjavik, Iceland.

Bruno L., Campo B., Costagli B., Picotti V. & Amorosi A.

Reconciling deep stratigraphy and shallow depositional architecture of the Po Plain through the integration of seismic and core data.

STRATI – 3rd International Congress on Stratigraphy, 2nd-5th July 2019, Milan.

Campo B., Bruno L., Di Martino A., Hong W. & Amorosi A.

Peat-based correlation and mapping as an effective tool to assess post-depositional strata deformation: an example from the mid-late Holocene Po delta plain succession (Northern Italy)

STRATI – 3rd International Congress on Stratigraphy, 2nd-5th July 2019, Milan.

Campo B., Bruno L., Amorosi A.

The buried Upper Pleistocene sedimentary succession of the Po Basin (Northern Italy): an expanded stratigraphic record of the Last Interglacial.

STRATI – Third International Congress on Stratigraphy, 2nd-5th July 2019, Milan.

Cacciari M, Rossi V, Marchesini M, Amorosi A, Bruno L., Campo B, and Kaniewski D

A stratigraphic-palynological approach to link Holocene vegetation dynamics, depositional patterns and palaeoclimate variability: insight from the Po delta plain (Northern Italy)

EGU - European Geosciences Union - General Assembly, 7th-12th April 2019, Vienna.

Rossi V, Amorosi A, Bruno L., Campo B, Giacomelli S

Ostracods and benthic foraminifers as a key to unravel Holocene depositional dynamics of coastal wetlands: evidence from the N Adriatic record.

EGU - European Geosciences Union - General Assembly, 7th-12th April 2019, Vienna.

Bruno L., Costagli B., Amorosi A.

Deformed stratigraphic markers in the shallow subsurface of the Po Plain: possible indicators of recent tectonic activity?

SGI-SIMP – Geosciences for the environment, natural hazard and cultural heritage, 12th-14th September 2018, Catania.

Bruno, L., Campo, B., Amorosi, A.

Landscape evolution in the Po Plain between the Last Glacial Maximum and the present interglacial (~25 - 7.5 ky BP).

EGU - European Geosciences Union - General Assembly, 8th-13th April 2018, Vienna.

Amorosi, A., Barbieri, G., Bohacs, K.M., Bruno, L., Campo, B., Drexler, T.M., Rossi, V., Sammartino, I., Scarponi, D., Vaiani, S.C.

Threefold dynamics of delta progradation revealed by the Holocene record of the Po River plain, Italy

EGU - European Geosciences Union - General Assembly, 8th-13th April 2018, Vienna, Austria.

Costagli, B., Bruno, L., Amorosi, A.

Deformed stratigraphic markers in the shallow subsurface of the Po Plain: possible indicators of recent tectonic activity?

EGU - European Geosciences Union - General Assembly, 8th-13th April 2018, Vienna, Austria (poster).

Amorosi, A., Bohacs, K.M., Bruno, L., Campo, B., Drexler, T.M.

How close is geological thought to reality? The concept of time as revealed by the Holocene sequence stratigraphy of the Po-Adriatic system, Italy

36th Annual Gulf Coast Section SEPM Foundation Perkins-Rosen Research Conference, 4-5 December 2017, Houston, Texas, USA.

Amorosi, A., Bruno, L., Campo, B., Morelli, A., Rossi, V., Scarponi, D., Hong, W., Bohacs, K.M., Drexler, T.M.

Allogenic versus autogenic controls on millennial-scale parasequence architecture: A study from the Holocene record of the Po Plain, Italy

11th International Conference on Fluvial Sedimentology, 17th-21st of July 2017, Calgary, Canada.

Bruno, L., Amorosi, A.

Stratigraphic architecture of the Po Plain (Italy) – from the basin scale to ultra-high resolution.

XV Congresso da Associação Brasileira de Estudos do Quaternário – ABEQUA. Ecodiversidade e sua sustentabilidade no quaternário. 18th-23th October 2015. Tramandai/Imbè, RS, Brazil.

Bruno, L., Amorosi, A., Severi, P., Costagli, B.

Late Quaternary aggradation rates and stratigraphic architecture of the southern Po Plain, Italy.

ISC -19th International Sedimentological Congress - Sedimentology at the crossroads of new frontiers. 18th-22nd August 2014, Geneva, Switzerland.

Bruno, L., Amorosi, A., Curina, R., Severi, P.

The impact of urban settlements on landscape evolution from the Iron Age to the Roman period in the Bologna area (Northern Italy).

FIST - Geitalia – IX Italian Forum of Earth Sciences. 16th-18th September 2013. Pisa.

Amorosi, A., Bruno, L., Curina, R., Severi, P., Rossi, V.

Subsurface stratigraphy and urban archaeology in the Bologna area.

EUREGEO - Sustainable Geo-Management - 7th European Congress on Regional GEOscientific Cartography and Information Systems. 12-15 June 2012, Bologna.