

PERSONAL INFORMATION

Andrea Di Giulio

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WORK EXPERIENCE

- 2004-present day** Full professor of Sedimentology and Basin Analysis (SSD GEO/02) at University of Pavia
2000-2004 Associate Professor of Sedimentology and Basin Analysis (SSD GEO/02) at University of Pavia
1987-2000 Researcher of Sedimentology and Basin Analysis (SSD GEO/02) at University of Pavia

TEACHING

- 1995-TODAY:** COURSES OF: ROCKS AND SEDIMENTARY BODIES (BACHELOR DEGREE IN GEOLOGICAL SCIENCES); SEDIMENTOLOGY (BACHELOR DEGREE IN GEOLOGICAL SCIENCES); BASIN ANALYSIS AND SEQUENCE STRATIGRAPHY (MASTER DEGREE IN APPLIED GEOLOGICAL SCIENCES); BASIN ANALYSIS (MASTER DEGREE IN GEOSCIENCES FOR SUSTAINABLE DEVELOPMENT).

MANAGEMENT EXPERIENCE

- SEPTEMBER 2021 – ACTUALLY:** RECTOR DELEGATE FOR THE RELATIONS BETWEEN ENI AND UNIVERSITY OF PAVIA
NOVEMBER 2015 - OCTOBER 2020: HEAD OF THE DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES OF THE UNIVERSITY OF PAVIA
NOVEMBER 2010 – 2015: MEMBER OF THE ACADEMIC SENATE OF THE UNIVERSITY OF PAVIA
NOVEMBER 2007 – NOVEMBER 2013: CHIEF OF THE BACHELOR DEGREE COURSE IN GEOLOGICAL SCIENCES AND MASTER DEGREE COURSE IN GEOLOGICAL SCIENCES AT UNIVERSITY OF PAVIA

AWARDS AND OTHER ACTIVITIES

1993 - DAL PIAZ AWARD OF THE ITALIAN GEOLOGICAL SOCIETY FOR THE YOUNG ITALIAN RESEARCHER HAVING THE BEST SCIENTIFIC PRODUCTION IN EARTH SCIENCES IN THE PERIOD 1991-1992

REVIEWER FOR THE FOLLOWING PEER-REVIEWED INTERNATIONAL JOURNALS: BULLETTIN OF THE GEOLOGICAL SOCIETY OF AMERICA; BASIN RESEARCH, JOURNAL OF SEDIMENTARY RESEARCH, SEDIMENTARY GEOLOGY, SEDIMENTOLOGY, TECTONICS, TECTONOPHYSICS, MEMOIRS OF THE GEOLOGICAL SOCIETY OF LONDON, JOURNAL OF SOUTH AMERICAN EARTH SCIENCES, ITALIAN JOURNAL OF GEOSCIENCES, OFIOLITI, JOURNAL OF MEDITERRANEAN SCIENCES.

FUNDED PROJECTS and CONTRACTS (recent or ongoing)

- Research Project PNRA 19-20 “The response of the sedimentary system through Permian to Jurassic abrupt climatic and provenance changes in Northern Victoria Land” granted by Progetto Nazionale di Ricerca in Antartide (responsible of Research Unit; still waiting for the contract between CNR and PI university; 131.800 Euros);
- Research Project “Circular Economy for Water and Energy (CE4WE)” granted by Regione Lombardia, involving UniPV and 5 industrial partners (PI; 2020-2022, 8.133.660 Euros);
- Contract UniPV-ENI for the funding of 1 PHD scholarship (PI; 2019-2022; XXXV cycle; 81.000 Euros);
- Research contract with ENI on “Diagenesis of carbonate cements” (PI; 2018; 70.000 Euros);
- Research contract with ENI on “Definition of heating timing of Paleozoic successions drilled in Northern Africa II (PI; 2019; 40.510 Euros);
- Contract UniPV-ENI for the funding of 3 PHD scholarships (PI; 2017-2021; XXXIII cycle; 215.000 Euros);
- Research contract with ENI on “Definition of heating timing of Paleozoic successions drilled in Northern Africa I (PI; 2017; 10.750 Euros);
- Research contract with the Petroleum Institute of Abu Dhabi regarding “Burial Diagenesis and thermochemical sulfate reduction in the Arab gas reservoirs: clues to controls on H₂S distribution (PI; 2013; 150.000 USD).

RESEARCH INTEREST (summary)

I have focussed my researches mostly on basin analysis, from basin origin to basin filling and post-depositional basin history; in addition my research regarded sedimentology and petrography of clastic depositional systems in a source to sink perspective, with special emphasis on successions accumulated into basins related to collisional geodynamic settings. I've been working on Alpine and Apennines systems, both on their pre- and post-collisional steps, as well as on Northern Victoria Land (Antarctica), northern Africa basins (Sirte and Illizi-Ghadames Basins) and Patagonia (Neuquen Basin). I've also studied modern and Quaternary alluvial sediments of the Po River alluvial plain. In the last years, I've particularly worked on: 1) 3D stratigraphic architecture and thermal state of the Pliocene-Pleistocene in the Po Plain subsurface and its potential for a geothermal exploitation; 2) diagenesis of clastic rocks combined with studies on the thermal history of sedimentary basins and its relations with subsurface exploration. Based on the expertise on Po Plain subsurface, I've been the PI of the Research Project CE4WE (Circular Economy for Water and Energy), funded by Regione Lombardia and focussed on the water cycle in the Lombardy subsurface and the treatment of waste materials produced by the water treatment for obtaining biodiesel. The major industrial partners of this project are Eni, CAP-Holding and A2A Servizi Idrici. I'm currently the supervisor of 2 PHD students: the first is working on the project “Construction of a 3D model of the Po Plain subsoil for the protection of groundwater and its sustainable exploitation by low-enthalpy geothermal energy” supported both by Eni; the second is working on the relations between the uplifted Apennines margin and its buried tectonic front in the frame of the CARG-Project Pavia-sheet.

RECENT PUBLICATIONS

Di Giulio A., Marini M., Felletti F., Patacci M., Rossi M., Amadori C., Menegoni N., Reguzzi S. & Tamburelli S. (2024) Basin topography and depositional styles controlled by collisional tectonics in the Alps-Appennines junction (Tertiary Piedmont Basin, NW Italy). *Geological Field Trips and Maps*, 16, Issue 1-2, Pages 1 – 58.

Amadori, C., Maino, M., Marini, M., Casini, L., Carrapa, B., Jepson, G., (. .) **Di Giulio, A.** (2023). The role of mantle upwelling on the thermal history of the tertiary-piedmont basin at the alps-appennines tectonic boundary. *Basin Research*, 35(3), pp. 1228-1257, doi:10.1111/bre.12752

Bordiga M., Lupi C., Langer C., Gianoncelli A., Birarda G., Pollastri S., Bonanni V. Bedolla D.E., Vaccari L., Girani G., Cerino F., Cabrini M., Beran A., Zuccotti M. Fiorentino G. Zanni M., Garagna S., Cobiانchi M. & **Di Giulio A.** (2023) Unexpected silicon localization in calcium carbonate exoskeleton of cultured and fossil coccolithophores. *Scientific Reports*, Volume 13, Issue 1 December 2023 Article number 7417.

Bordiga, M., Lupi, C., Zanoni, M., Bianco, S., Cabrini, M., Fiorentino, G., (. .) **Di Giulio, A.** (2022). A new method to speed up nanofossil picking for monospecific geochemical analyses. *Journal of Marine Science and Engineering*, 10(12) doi:10.3390/jmse10121829

Tamburelli S., **Di Giulio A.**, Amadori C., Consonni A., Orteni A. (2022) New constraint on burial and thermal history of Devonian reservoir sandstones in the Illizi-Ghadames basin (North Africa) through diagenetic numerical modelling. *Marine and Petroleum Geology*, 145, 10.1016/j.marpetgeo.2022.105903

Ceriani A., Arboit F., **Di Giulio A.**, Decarlis A., Steuber T., Amadori C., Al Suwaidi A. (2022) The influence of tectonic activity on clathrate destabilization: microthermometry and Raman insights from seep carbonates in the Alps-Appennines tectonic knot. *Basin Research*, 34, 555-569, doi:10.1111/BRE.12630.

Di Giulio A., Grigo D., Zattin M., Amadori C., Consonni A., Nicola C., Orteni A., Scotti P., Tamburelli S. (2021) - Diagenetic history vs. thermal evolution of Paleozoic and Triassic reservoir rocks in the Ghadames-Illizi Basin (Algeria-Tunisia-Libya). *Marine and Petroleum Geology*, 127, doi.org/10.1016/j.marpetgeo.2021.104979

Mueller P., Patacci M., **Di Giulio A.** (2021) - Hybrid event bed distribution in a mixed siliciclastic-calcareous turbidite succession: a cross-current perspective from the Bordighera Sandstone, Ligurian Alps, NW Italy. *Italian Journal of Geosciences*, 140(2), pp. 255-274, doi: 10.3301/IJG.2020.32

Di Giulio A., Amadori C., Mueller P. & Langone A. (2020) Role of the down-bending plate as a detrital source in convergent systems revealed by U–Pb dating of zircon grains: Insights from the southern andes and western Italian Alps. *Minerals*, 10/7, 1-19. Doi:10.3390/min10070632.

Patacci M., Marini M., Felletti F., **Di Giulio A.**, Setti M., McCaffrey W. (2020) Origin of mud in turbidites and hybrid event beds: insight from ponded mudstone caps of the Castagnola turbidite system (NW Italy). *Sedimentology*, doi: 10.1111/sed.12713

Maino M., Casini L., **Di Giulio A.**, Setti M., Seno S. (2020) Time-dependent heat budget of a thrust from geological records and numerical experiments. *Journal of Geophysical Research, Solid Earth*, 125, e2019JB018940, DOI:10.1029/2019JB018940.

Mueller P., Langone A., Patacci M., **Di Giulio A.** (2020) Towards a Southern European Tethyan Palaeomargin provenance signature: sandstone detrital modes and detrital zircon U–Pb age distribution of the Upper Cretaceous–Paleocene Monte Bignone Sandstones (Ligurian Alps, NW Italy). *International Journal of Earth Sciences*, 109, 201–220, doi.org/10.1007/s00531-019-01797-5.

Di Giulio A., M. Marini, F. Felletti, M. Patacci, C. Amadori, M. Rossi (2019) Control exerted by collisional tectonics on basin topography and depositional styles: The Tertiary Piedmont Basin in the Alps-Appennines Junction (NW Italy). In "Sedimentology to face societal challenges to risks, resources and record of the past", International Meeting of Sedimentology, Rome 2019. *Field Trips Guide Book*, 257-288, ISBN 978-88-944576-0-5.

Amadori C., Toscani G., **Di Giulio A.**, Maesano F., D'ambrogi C., Ghielmi M., Fantoni R. (2019) From cylindrical to non-cylindrical foreland basin: Pliocene-Pleistocene evolution of the Po Plain-Northern Adriatic Basin (Italy). *Basin Research*, 31, 991-1015, doi.org/10.1111/bre.12369

Sternai P., Sue C., Husson L., Serpelloni E., T. W. Becker T. W., Willett S. D., Faccenna C., **Di Giulio A.**, Spada G., Jolivet L., Valla P., Petit C., Nocquet J., Walpersdorf A., Castelltort S. (2019) Present-day uplift of the European Alps: Evaluating mechanisms and models of their relative contributions. *Earth-Science Reviews*, 190, 589-604, <https://doi.org/10.1016/j.earscirev.2019.01.005>.

Amadori C., Garcia-Castellanos D., Toscani G., Sternai P., Fantoni R., Ghielmi M. & **Di Giulio A.** (2018) Restored topography of the Po Plain-Northern Adriatic region during the Messinian base-level drop - implications for the physiography and compartmentalisation of the paleo-Mediterranean basin. *Basin Research*, 30, 1247-1263, DOI: 10.1111/bre.12302

Mueller P., Langone A., Patacci M. & **Di Giulio A.** (2018) Detrital signatures of impending collision: the deep-water record of the Upper Cretaceous Bordighera Sandstone and its basal complex (Ligurian Alps, Italy). *Sedimentary Geology*, 377, 147-161, DOI:10.1016/j.sedgeo.2018.10.002

Amadori C., Fantoni R., Ghielmi M., Toscani G. & **Di Giulio A.** (2018) – 14. Po Plain MSC surfaces. In "Seismic Atlas of the Messinian Salinity Crisis Markers in the Mediterranean Sea – Vol. 2" (Lofi J. Ed.), *Societe Geologique de France*, 50, doi:10.10682/2018MESSINV2.

Marchionda E., Deschamps R., Cobianchi M., Nader F.H., **Di Giulio A.**, Morad D.J., Al Darmaki F. & Ceriani A. (2018) Field-scale depositional evolution of the Upper Jurassic Arab Formation (onshore Abu Dhabi, UAE). *Marine and Petroleum Geology*, 89, 350-369.

Mueller P. Patacci M., **Di Giulio A.** (2017) Hybrid event beds in the proximal to distal extensive lobe domain of the coarse-grained and sand-rich Bordighera turbidite system (NW Italy). *Marine and Petroleum Geology*, 86, 908-931.

Di Giulio A., Ronchi A., Sanfilippo A., Balgord E.A., Carrapa B. & Ramos V. A. (2017) Cretaceous evolution of the Andean margin between 36°S and 40°S latitude through a multiproxy provenance analysis of Neuquen Basin strata (Argentina). *Basin Research*, 29/3, 284-304.

Toscani G., Marchesini A., Barbieri C., **Di Giulio A.**, Fantoni R., Mancin A., Zanferrari A. (2016) The Venetian-Friulian basin i: architecture and sediment flux into a shared foreland basin. *Italian Journal of Geosciences*, 135/3, 444-459, DOI:10.330/IJG:2015.35.

Mancin N., Barbieri C., **Di Giulio A.**, Fantoni R., Marchesini A., Toscani G., Zanferrari A. (2016) - The Friulian-Venetian Basin II: paleogeographic evolution from micropaleontological constraints. *Italian Journal of Geosciences*, 135/3, 460-473, DOI:10.3301/IJG.2015.34.

Carrapa B., **Di Giulio A.**, Mancin N., Stockli D., Fantoni R, Hughes A. and Gupta S. (2016) - Tectonic significance of Cenozoic exhumation and foreland basin evolution in the Western Alps. *Tectonics* , 35/8, 1892-1912; DOI:10.1002/2016TC004132

Maino M., Casini L., Ceriani A., Decarli A., **Di Giulio A.**, Seno S., Setti M., Stuart F. M. (2015) Dating shallow thrusts with zircon (U-Th)/He thermochronometry - the shear heating connection. *Geology*, 43, p. 495-498, doi:10.1130/G36492.1.

Di Giulio A., Ronchi A. Sanfilippo A., Balgord E., Carrapa B., and V. A. Ramos (2015) Cretaceous evolution of the Andean margin between 36°S and 40°S latitude through a multi-proxy provenance analysis of Neuquén Basin strata (Argentina). *Basin Research*, doi: 10.1111/bre.12176.

Toscani G., Bonini L., Ahmad M.I., Di Bucci D., **Di Giulio A.**, Seno S., Galuppo C. (2014) Opposite verging chains sharing the same foreland: Kinematics and interactions through analogue models (Central Po Plain, Italy). *Tectonophysics*, 633, 268-282. DOI: 10.1016/j.tecto.2014.07.019

Di Giulio A., Mancin N., Martelli L., Sani F. (2013) Foredeep palaeobathymetry and subsidence trends during advancing then retreating subduction: The Northern Apennine case (Oligocene-Miocene, Italy). *Basin Research*, 25/3, 260-284, DOI: 10.1111/bre.12002.

Di Giulio A., Ronchi A., Sanfilippo A., Tiepolo M., Pimentel M., Ramos V.A. (2012) Detrital zircon provenance from the Neuquén Basin (south-central Andes): Cretaceous geodynamic evolution and sedimentary response in a retroarc-foreland basin. *Geology*, 40/6, 559-562, doi.org/10.1130/G33052.1.

Personal data According to law 679/2016 of the Regulation of the European Parliament of 27th April 2016, I hereby express my consent to process and use my data provided in this CV

Date: Pavia, 10 May, 2024

Signature: Andrea Di Giulio

