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**Current position:** Fixed-term research assistant (RTD-B) in Physical Geography and Geomorphology (ssd GEO/04) – University of Modena and Reggio Emilia (Italy)

**Previous Positions:**

- 2020 - 2022 senior researcher – Eurac Research (Italy)
- 2019 post-doc fellow – CNRS (Centre National de la Recherche Scientifique), Lyon - Unité UMR 5600 EVS (France). Supervisor: Hervé Piegay.
- 2017 - 2018 post-doc fellow – Free University of Bolzano-Bozen (Italy). Supervisor: Francesco Comiti. Project: FHARMOR Fish Habitat in Alpine Rivers: Integrating Monitoring, Modelling and Remote Sensing
- 2015 - 2017 post-doc fellow – Free University of Bolzano-Bozen (Italy). Supervisor: Francesco Comiti. Project: Etsch-2000: Evolution of the Etsch River: Historical changes in channel morphology over 2 millennia.
- 2012 - 2015 post-doc fellow – University of Molise (Italy). Supervisor: Carmen Roskopf. Project: Studio dell'area della Provincia di Isernia finalizzato alla conoscenza e caratterizzazione degli aspetti geologici e geomorfologici relativi ai siti maggiormente antropizzati e delle connesse problematiche di rischio idrogeologico e sismico

**Education:**

- 2012 PhD in Earth Science – University of Naples Federico II (Italy)
- 2007 Master Degree in Geology and Applied Geology – University of Naples Federico II (Italy)
- 2005 Bachelor Degree in Earth Science – University of Molise (Italy)

**Research topics:**

- (1) Fluvial Geomorphology
- (2) Flood hazard scenarios
- (3) Human impact on the fluvial system
- (4) Hillslope - channel coupling
- (5) Sediment connectivity
- (6) Geomorphological survey and mapping
- (7) River restoration
- (8) Fluvial processes and biodiversity conservation

### **Research projects (as participant or PI):**

- 2023 (in progress) research unit project management in the project BAD2BED- BADland morphodynamics assessment and hillslope-channel BED coupling in the context of global change.
- 2023 (in progress) project management in the project "Analisi geomorfologica del Fiume Serio finalizzata alla sua gestione integrata e sostenibile", project founded by Autorità di bacino distrettuale del fiume Po.
- 2022 – 2023 participant in the project "Analisi dell'interazione tra dinamica fluviale e processi di versante ai fini dell'individuazione di situazioni di rischio geomorfologico", University of Modena and Reggio Emilia. Project founded by Agenzia regionale per la sicurezza territoriale e la protezione civile, Emilia Romagna.
- 2020 - 2022 principal investigator in COUPEVENT (Hillslope - Channel coupling during extreme events in South Tyrol), Eurac Research (Italy), project founded by Autonomous Province of Bolzano – Bozen.
- 2018 - 2019 participant in SEDIPLAN (Sediment budgeting and planning for rivers in South-Tyrol: from hazard mitigation to environmental restoration), Free University of Bolzano - Bozen (Italy), (Prof. Francesco Comiti)
- 2017 - 2018 participant in FHARMOR (Fish Habitat in Alpine Rivers: Integrating Monitoring, Modelling and Remote Sensing), Free University of Bolzano - Bozen (Italy), (Prof. Francesco Comiti)
- 2017 - 2015 participant in ETSCH-2000 (Evolution of the Etsch River: Historical changes in channel morphology over 2 millenia), Free University of Bolzano - Bozen (Italy), (Prof. Francesco Comiti)
- 2012 - 2015 participant in *Studio dell'area della Provincia di Isernia finalizzato alla conoscenza e caratterizzazione degli aspetti geologici e geomorfologici relative ai siti maggiormente antropizzati*, University of Molise (Italy), (Prof. Carmen Roskopf).

### **Fundings**

- 2023 PRIN 2022. Project: BAD2BED - BADland morphodynamics assessment and hillslope-channel BED coupling in the context of global change. Project in collaboration with Università di Roma la Sapienza and Università di Bari Aldo Moro. Funds: €232.000; role: Responsible University of Modena and Reggio Emilia unit.
- 2023 – 2024 project "Analisi geomorfologica del Fiume Serio finalizzata alla sua gestione integrata e sostenibile", project founded by Autorità di bacino distrettuale del fiume Po. Founded by Autorità di bacino distrettuale del fiume Po. Funds: € 100,000 ; role: project management
- 2020 - 2022 project: COUPEVENT Hillslope - Channel coupling during extreme events in South Tyrol) founded by Autonomous Province of Bolzano – Bozen. Institution: Eurac Research (Italy), funds: €166,817.0; Role: principal investigator)

### **National Scientific Qualification:**

- 2018 - 2024 Associate University Professor in the disciplinary area 04/A3 Geologia Applicata, Geografia Fisica e Geomorfologia (Applied Geology, Physical Geography and Geomorphology)

### **Awards, grants and other assignments:**

- 2023: keynote speaker GBR9-Processes resilience and management in a changing environment. Villarrica Chile, 09-14 January 2023
- 2022 best poster award: *Monitoring storm induced morphological effects in aa dolomitic catchment of the Italian Alps: insights for the understanding of the hillslope-channel sediment coupling*, Il ruolo del monitoraggio nello studio della gestione del rischio idrogeologico per la tutela del territorio montano, 28-30 September 2022, La Villa – Badia, Italy. Federazione ASITA
- 2022: convener and chairperson, session Fluvial Geomorphology, 10th IAG International Conference on Geomorphology, 12-16 September 2022, Coimbra Portugal
- 2022-2021: Organizing and Scientific Committee, online Workshops Women in Geomorphology 2021-2022, Hellenic Committee for Geomorphology and Environment
- 2021: keynote speaker 90° Congresso della Società Geologica Italiana, session Floods Trieste, 14-16 September 2021
- 2018: Invited speaker, Academic-stakeholder Workshop - I.S. Rivers Conference 2018 - Integrative Sciences and Sustainable Development of Rivers, Challenges in managing Fluvial Systems in Anthropocene innovations in analyzing Rivers Co-evolving with Human Activities. Lyon, 4-8 June 2018
- 2018: invited speaker at GeoEnviron seminar, Geoscience Department of the Eberhard Karls, University of Tübingen, Germany
- 2020 grant sponsored by the Autonomous Province of Bolzano-Bozen “*Bandi di concorso per la mobilità di ricercatrici e ricercatori (L.P.14)*”, founding the project CoupEvent Funds: €166,817
- 2014 grant for young geomorphologist sponsored by AIGEO
- 2010 best oral presentation award: 10<sup>th</sup> edition International Summer School Environmental Hazards and Sustainable Development in Mountain Regions, Natural hazard Research Centre. Romanian Academy, Institute of Geography (Romania) and National Committee for global environmental change, 25th July 2010, Paterlage, Romania

### **Teaching appointments:**

- 2022-2023, 2023-2024: **Information Geographic systems and digital cartography** bachelor’s degree in Geological Sciences, University of Modena and Reggio Emilia, Italy
- 2021-2023, 2021- 2022, 2023-2024: **Hydraulic Risk**, master’s degree in Geosciences, Geo Risks and Georesources, University of Modena and Reggio Emilia, Italy
- 2022-2022: **Physical Geography**, bachelor’s degree in Natural Sciences, University of Modena and Reggio Emilia, Italy
- 2021-2022: **Basics of Geology**, bachelor’s degree in Agricultural, Food and Mountain Environmental Sciences, Free University of Bolzano, Italy

- 2020-2021, 2018-2019, 2017-2018: **Hydromorphology**, master's degree in civil engineering for Mitigation of Risk from Natural Hazards, University of Pavia, Italy
- 2020-2021, 2018-2019: **International Regional Studies in Geography**, bachelor's degree in Geography, Alpen- Adria Universität, Klagenfurt, Austria
- 2019-2020: **Advanced Physiogeography**, master's degree in Geography, Alpen- Adria Universität, Klagenfurt, Austria

## Memberships

AIGeo, Italian Association of Physical Geography and Geomorphology

IAG, International Association of Geomorphologists

## Editorial Activities:

Guest Editor for the journal Geomorphology (Elsevier). Special Issue: Fluvial geomorphology: sediment transport, river management, and extreme events at different spatial and temporal scales.

<https://www.sciencedirect.com/journal/geomorphology/special-issue/10HLXBL8C67>

Reviewer for the following journals: Catena (Elsevier), Earth Surface Processes and Landforms (Wiley), Geografia Fisica e Dinamica Quaternaria, Geomorphology, Global and Planetary Change, Hydrological Sciences Journal, International Journal of River Basin Management, Journal of Hydrology, Journal of Maps, Oxford Bibliographies in Environmental Science, Rendiconti Online della Società Geologia Italiana, River Research

## List of Papers

1. Ruiz-Villanueva V, **Scorpio V.**, Bachmann A., Brousse G., Cavalli M., Comiti F., Crema S., Fernández E., Furdada G., Hajdukiewicz H., Hunzinger L., Lucia A., Marchi L., Moraru A., Piégay H., Piton G., Rickenman D., Righini M., Surian N., Yassine R., Wyzga B. (2023) Channel widening in mountain and foothills areas during floods: insights from a European meta-analysis. *Science of Total Environment* 903, 166103. <https://doi.org/10.1016/j.scitotenv.2023.166103>
2. Ferrer-Boix, C., **Scorpio V.**, Martín-Vide, J.P., Núñez-González, F., Mora, F. (2023) Massive incision and outcropping in a former braided river due to mining and training. *Geomorphology*, 108774. <https://doi.org/10.1016/j.geomorph.2023.108774>.
3. Parenti C., Rossi P., Mancini, F., **Scorpio, V.**, Grassi F., Ciccacese G., Lugli F., Soldati M. (2023). Multitemporal Analysis of Slow-Moving Landslides and Channel Dynamics through Integrated Remote Sensing and In Situ Techniques. *Remote Sens.* 2023, 15, 3563. <https://doi.org/10.3390/rs15143563>
4. Steger S., **Scorpio V.**, Comiti F., Cavalli M. (2022). Data-driven modelling of joint debris flow release susceptibility and connectivity. *Earth Surf. Process. Landforms*, 1-25. Available from: <https://doi.org/10.1002/esp.5421>

5. **Scorpio, V.**, Cavalli, M., Steger, S., Crema, S., Marra, F., Zaramella, M. et al. (2022). Storm characteristics dictates sediment dynamic and geomorphic changes in mountain channels: A case study in the Italian Alps. *Geomorphology*, 403, 108173. Available from: <https://doi.org/10.1016/j.geomorph.2022.108173>
6. Filocamo F., Leone N., Roskopf C.M., Scorpio V., Giralt S., Aucelli P.P.A. (2021). Quaternary Evolution of the Lower Calore and Middle Volturno Valleys (Southern Italy). *Water*, 13, 741. <https://doi.org/10.3390/w13050741>
7. **Scorpio V.**, Piégay H. (2021). Is afforestation a driver of change in Italian rivers within the Anthropocene Era? *Catena* 198, 105031. <https://doi.org/10.1016/j.catena.2020.105031>
8. **Scorpio, V.**, Andreoli, A., Zaramella, M., Moritsch, S., Theule, J., Dell'Agnese, A., Muhar, S., Borga, M., Bertoldi, W., Comiti, F. (2020). Restoring a glacier-fed river: Past and present morphodynamics of a degraded channel in the Italian Alps. *Earth Surf. Process. Landforms* 45: 2804 – 2823. <https://doi.org/10.1002/esp.4931>.
9. Aucelli P.C.C., Valente E., Di Paola G., Amato V., Cesarano M., Cozzolino M., Pappone G., Scorpio V., Roskopf C.M. (2020). The influence of the geological-geomorphological setting on human settlements and historical urban development: the case study of Isernia (southern Italy). *Journal of Maps*. <https://doi.org/10.1080/17445647.2020.1794989>
10. Zerbe S., Rohrmoser O., **Scorpio V.**, Comiti F. (2019). Vegetationsentwicklung nach einer Flussrenaturierung in den Alpen. *WasserWirtschaft* 11, 18 - 23
11. **Scorpio V.**, Surian N., Cucato M., Dai Prá E., Zolezzi G., Comiti F. (2018). Channel changes of the Adige River (Eastern Italian Alps) over the last 1000 years and identification of the historical fluvial corridor. *Journal of maps* 14(2): 680-691. DOI: 10.1080/17445647.2018.1531074
12. **Scorpio V.**, Crema S., Marra F., Righini M., Ciccacese G., Borga M., Cavalli M, Corsini A., Marchi L., Surian N., Comiti F. (2018). Basin-scale analysis of the geomorphic effectiveness of flash floods: a study in the northern Apennines (Italy). *Science of Total Environment* 640–641, 337–351. DOI: 10.1016/j.scitotenv.2018.05.252
13. Aucelli PPC, Di Paola G, Valente E, Amato V., Bracone V, Cesarano M., Di Capua G., **Scorpio V.**, Capalbo A, Pappone G, Ravera F., Roskopf CM (2018). First assessment of the local seismic amplification susceptibility of the Isernia Province (Molise Region, Southern Italy) by the integration of geological and geomorphological studies related to the first level seismic microzonation project. *Environmental Earth Sciences* 77(4), 118. DOI: 10.1007/s12665-018-7319-4
14. **Scorpio V.**, Zen S., Bertoldi W., Surian N., Mastronunzio M., Dai Prá E., Zolezzi G., Comiti F. (2018). Channelization of a large Alpine River: what is left of its original morphodynamic? *Earth Surface Processes and Landforms* 43(5), 1044-1062 DOI: 10.1002/esp.430
15. Marchese E., **Scorpio V.**, Fuller I., McColl S., Comiti F. (2017). Morphological changes in Alpine rivers following the end of the Little Ice Age. *Geomorphology* 295, 811-826. DOI: 10.1016/j.geomorph.2017.07.018

16. De Vincenzo A., Molino J.A., Molino B., **Scorpio V.** (2017). Reservoir Rehabilitation: the new methodological approach of Economic Environmental Defence. *International Journal of Sediment Research* 32, 288-294. DOI: 10.1016/j.ijsrc.2016.05.007
17. **Scorpio V.**, Roskopf C.M. (2016). Channel adjustments in a Mediterranean river over the last 150 years in the context of anthropic and natural controls. *Geomorphology* 275, 90-104. DOI: 10.1016/j.geomorph.2016.09.017
18. **Scorpio V.**, Loy A., Di Febbraro M., Rizzo A., Aucelli P. (2016). Hydromorphology meets mammal ecology: morphological quality index, recent channel adjustments and otter resilience. *River Research and Applications* 32, 267- 279. DOI: 10.1002/rra.2848
19. **Scorpio V.**, Santangelo N., Santo A. (2016). Multiscale map analysis in alluvial fan flood-prone areas. *Journal of Maps* 12/2, 382-393. DOI: 10.1080/17445647.2015.1027155
20. **Scorpio V.**, Roskopf C., Aucelli P.P.C., Pisano L. (2016). Ongoing channel changes in some major rivers in southern Italy. *Rendiconti online Soc. Geol. It.* 41, 73-75 DOI: 10.3301/ROL.2016.96
21. **Scorpio V.**, Aucelli P.P.C., Giano I., Pisano L., Robustelli G., Roskopf C.M., Schiattarella M. (2015). River channel adjustment in Southern Italy over the past 150 years and implications for channel recovery. *Geomorphology* 251, 77-90. DOI: 10.1016/j.geomorph.2015.07.008
22. Santo A., Santangelo N., Di Crescenzo G., **Scorpio V.**, De Falco M., Chirico G.B. (2015). Flash flood occurrence and magnitude assessment in an alluvial fan context: the October 2011 event in the Southern Apennines. *Natural Hazard*. DOI: 10.1007/s11069-015-1728-4
23. Roskopf C.M., **Scorpio V.** (2013). Geomorphological map of the Biferno river valley floor system (Molise, Southern Italy). *Journal of Maps* 9/1, 106-114. DOI: 10.1080/17530350.2012.755385
24. Santangelo N., Daunis-i-Estadella J., Di Crescenzo G., Di Donato V., Faillace P., Martin-Fernandez J.A., Romano P., Santo A., **Scorpio V.** (2012). Topographic predictors of susceptibility to alluvial fan flooding, Southern Apennines. *Earth Surface Processes and Landforms* 37, 803–817. DOI: 10.1002/esp.3197.
25. Chirico G.B., Di Crescenzo G., Santangelo N., Santo A., **Scorpio V.** (2012). Alluvial fan flooding hazard: the study case of Teglia (San Gregorio Magno, Salerno). *Rendiconti online Soc. Geol. It.* 21, 456-458.
26. Aucelli P.P.C., Amato V., **Scorpio V.**, Bracone V., Roskopf C. (2012). Palaeo-landscape reconstruction and assessment of long-term erosion rates through DEM analysis: preliminary results from the Molise Apennine (Central-Southern Italy). *Rendiconti online Soc Geol. It.* 21, 1105-1107.
27. Santangelo N., Santo A., Di Crescenzo G., Foscarini G., Liuzza V., Sciarrotta S., **Scorpio V.** (2011). Flood susceptibility assessment in a highly urbanized alluvial fan: the case of Sala Consilina (southern Italy). *Nat. Hazards Earth Syst. Sci.* 11, 2765-2782. DOI: 10.5194/nhess-11-1-2011.

28. Aucelli P.P.C., Fortini P., Roskopf C. M., **Scorpio V.**, Viscosi V. (2011). Recent channel adjustments and riparian vegetation: some examples from Molise (Italy). *Geografia Fisica e Dinamica Quaternaria* 34, 161-173.