

PERSONAL INFORMATION

Giulio Iovine



 Research Institute for Geo-Hydrological Protection (IRPI) – Section of Cosenza (Italy)

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 <https://scholar.google.it/citations?user=WUYQ1RAAAAAJ&hl=it>

ORCID ID 0000-0002-8023-2973

Current Position Senior Scientist at CNR-IRPI of Cosenza

RESEARCH INTERESTS

Summary

Researches mostly concerned slope movements, specifically in terms of inventories, analyses of causal factors, and susceptibility/hazard/risk (SHR) evaluations by geo-statistical and modelling approaches. Interests migrated from mapping of dangerous phenomena to spatial quantitative analyses of predisposing conditions and ground effects, to triggering mechanisms. Numerical models (mainly, based on parallel Cellular Automata and Genetic Algorithms) were developed to predict activation and evolution, aiming at SHR zoning by GIS and geo-statistical techniques. Both on-site and remote monitoring was employed with surveys to support risk mitigation, based on early identification and forecast of extreme rainfall events and of their potential effects (e.g., along the Italian railway). As concerns modelling, calibration and validation against real cases and sensitivity analyses were the subject of in-depth analyses. Researches were mostly carried out in Southern Apennine, thanks to multi-disciplinary co-operations.

Bibliometric Indicators

SCOPUS: h-index 21, citations 1662, documents 78
Google Scholar: h-index 27, citations 2661, i10-index 53

WORK EXPERIENCE

From 2021 to today

CNR Senior Scientist

Research Institute for Geo-Hydrological Protection (IRPI) – Section of Cosenza

- Monitoring and modelling of slope movements affecting the railway.
- Morphometric analyses of shallow landslides aimed at runout evaluations.

From 1994 to 2020

CNR Scientist

Research Institute for Geo-Hydrological Protection (IRPI) – Section of Cosenza

- Hydrological modelling for prediction of the triggering of slope movements.
- Numerical modelling of flow-like landslides for susceptibility/hazard assessment and mapping.
- Scientific formation of numerous university students in Earth Sciences (thesis supervisor).

EDUCATION AND TRAINING

From Feb.1998 to Aug.1998

CNR scholarship for foreign countries

U.S. Geological Survey National Center, Reston, Virginia

- Research project on "Debris-flow hazard and specific risk in the Blue Ridge Mountains (Eastern United States)" - Tutor: G.F. Wieczorek.

From June 1991 to May 1993

CNR / MISM Research fellow

Research Institute for Geo-Hydrological Protection (IRPI) – Section of Cosenza

- Biennial scholarship on "Applying GIS to the study of slope movements"
- Landslide inventory and mapping through remote sensing and field surveys.
- GIS analyses of geological and landslide data.

29.03.1988

Degree *cum laude* in Geological Sciences (four-year, old system)

University of Napoli - "Federico II"

- Experimental thesis: "*The activity of Vesuvius from 1631 to 1944: an investigation into problems on the volcanic hazard in the Vesuvius area*" – Supervisor: Prof. L. Lirer.

PERSONAL SKILLS

Mother tongue(s)

Italian

Other language(s)

| UNDERSTANDING | | SPOKEN | | WRITTEN PRODUCTION |
|---------------|---------|-------------|-----------------|--------------------|
| Listening | Reading | Interaction | Oral production | |
| B2 | C2 | B2 | B2 | C2 |

Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user
Common European Framework of Reference for Languages

INSTITUTIONAL RESPONSIBILITIES

from Oct. 2021-today

President of the Order of Geologists of Calabria (period 2021-2025).

from Oct. 2017 to Sep. 2021

Vice-President of the Order of Geologists of Calabria (period 2017-2021).

from Jan. 2011 to June 2015

Office manager of the CNR-IRPI - Section of Cosenza.

from Feb. 2014 to Jan. 2015

President of CNR "Research Area of Cosenza".

from Feb. 2012 to Jan. 2013

President of CNR "Research Area of Cosenza".

from Jan. 2011 to June 2015

Member of CNR "Research Area of Cosenza" Committee

from June 2021-today

Scientific Responsible of the Research Group "Numerical modelling, geostatistical analyses and GIS for mapping and mitigation of natural risks" (GEOMATICA).

NATIONAL AND INTERNATIONAL GRANTS (as principal investigator)

2004-2022

Responsible for CNR-IRPI of ca. 30 projects, successfully realized (below, the most important are listed). Participation to 26 projects (omitted).

- co-Responsible Contract with RFI SpA on "Implementation of an experimental system for real-time monitoring of the development of thunderstorm precipitation on small basins in the sample territory of the DTP of Reggio Calabria" - 24 months, since Sept. 2019.

- Responsible of 10 Contracts with RFI SpA on "Geological-technical characterization, through innovative approaches, along the Battipaglia-Reggio Calabria railroad at ... for the adoption of innovative mitigation actions and the realization of remedial works for the reduction of geo-hydrological risk", several locations in Calabria and Campania, from Mar. 2014 to May 2019.

- co-Responsible biennial Scientific Cooperation Agreement with RFI SpA, CNR-ISAC, and ARPACAL-Centro Funzionale Multirischi della Regione Calabria on "Multisensorial analyses for forecasting severe storms in Calabria for preventing and mitigating geo-hydrological risk along the RFI railroad", 24 months, since Oct. 2015.

- co-Responsible Scientific Cooperation Agreement with RFI SpA "Territorial studies along the railways of RFI SpA - DTP-RC for the adoption of mitigation actions and the planning of remedial works for the reduction of geo-hydrological risk", since May.2014.

- Responsible Scientific Cooperation Agreement with University of Natural Resources and Life Sciences (IMRE) on "Risk evaluation and mitigation, including monitoring of physical parameters of interest, hydraulic modelling of triggering conditions, numerical modeling of landslide development, mapping of threatened areas, vulnerability evaluation, potential loss evaluation, risk mapping and implementation of early-warning systems", since Feb.2012.

- co-Responsible for study areas in Calabria, Basilicata, Sicilia and Campania, Contract with Nat. Dep. of Civil Protection on "Definition of landslide triggering rainfall thresholds in Italy at national and regional scale", Ministero dell'Università e della Ricerca MUR - BANDO 2020, since Nov.2010.

- Responsible Scientific Cooperation Agreement with Advanced Devices SpA on "Development of automated systems for the control of territorial parameters for implementing automated procedures

of risk mitigation", since Feb.2009.

- Responsible Int. Sc. Coop. Agreement with Russian Academy of Sciences (RAS) on: "Natural hazard assessment and monitoring for urban territories", from 2008 to 2010.
- co-Responsible Research co-operation project "Italia-Taiwan" with NCDR "Nat. Science & Technology Center for Disaster Reduction", Univ. of Taiwan on "Modeling and simulation of debris flows through Cellular Automata and Genetic Algorithms: applications to case studies in Taiwan for susceptibility evaluations", in 2004

TEACHING ACTIVITY

2000-today

Since 2000, lecturer of the following courses at University of Calabria:

- APPLIED GEOLOGY

- o Degree in Civil Engineering - Academic Years 2016/2017-2021/2022
- o Degree in Engineering for the Environment and the Territory - Academic Years 2013/2014-2014/2015
- o Degree in Geological Sciences - Academic Years 2001/2002-2003/2004

- FUNDAMENTALS OF APPLIED GEOLOGY

- o Degree in Geological Sciences, Academic Years 2004/2005-2006/2007

- GEOTECHNICS

- o Degree in Geological Sciences, Academic Year 2000/2001

Supervisor of numerous Master/Bachelor Degree Thesis.

ORGANIZATION OF SCIENTIFIC MEETINGS (in the last 10 years)

since 2003

Main Convenor / co-Convenor of numerous scientific sessions in International meetings.

- ✓ Session NH9.7 "Monitoring and modelling of dangerous phenomena: innovative techniques for hazard evaluation and risk mitigation". European Geosciences Union (EGU) General Assembly 2019, Vienna, Austria, 7-12 April 2019. Main Convenor: G. Iovine, co-Conveners: Abel Cruz, Marleen de Ruiter, Manuel Pastor, Veronica Pazzi, Victor Manuel Hernandez Madrigal, Stefano Morelli, Stefano Utili - Chairperson: Veronica Pazzi; Marleen de Ruiter; Stefano Morelli (oral and poster sessions)
- ✓ Session NH9.9/AS5.20/GI1.9/HS11.41/SSS13.64 "Monitoring and modelling of dangerous phenomena: innovative, low-cost techniques, tools and constraint of engineering-geological models for hazard evaluation and risk mitigation". European Geosciences Union (EGU) General Assembly 2018, Vienna, Austria, 8-13 April 2018. Main Convenor: G. Iovine, co-Conveners: Johannes Huebl, Manuel Pastor, Denis Cohen, Veronica Pazzi, Stefano Morelli, Stefano Utili, Gabriel Rodriguez Roca, Matteo Del Soldato, Roberto Tomás Jover - Chairmen: Johannes Huebl & Veronica Pazzi (oral session); Stefano Morelli, Matteo Del Soldato, Roberto Tomás Jover (poster session)
- ✓ Session NH9.9/GI1.8 "Monitoring and modelling of dangerous phenomena, and innovative techniques for hazard evaluation and risk mitigation". European Geosciences Union (EGU) General Assembly 2017, Vienna, Austria, 23-28 April 2017. Main Convenor: G. Iovine, co-Conveners: Johannes Huebl, Christoph Aubrecht, Manuel Pastor, Denis Cohen - Chairmen: Johannes Huebl & D. Cohen
- ✓ Session NH9.9 "Monitoring and modelling of dangerous phenomena, and innovative techniques for hazard evaluation and risk mitigation", European Geosciences Union (EGU) General Assembly 2016, Vienna, Austria, 17-22 April 2016. Main Convenor: G. Iovine, co-Conveners: Johannes Huebl, Christoph Aubrecht, Manuel Pastor, Denis Cohen - Chairmen: G. Iovine & D. Cohen
- ✓ Session NH3.6 "Advanced methods in landslides research: modelling", European Geosciences Union (EGU) General Assembly 2015, Vienna, Austria, 12-17 April 2015. Main Convenor: G. Iovine, co-Convenor: D. Cohen - Chairmen: G. Iovine & S.L. Gariano (Oral), G. Iovine & S.L. Gariano (Poster)
- ✓ Session NH9.12 "Modelling of dangerous phenomena, and innovative techniques for hazard evaluation and risk mitigation", European Geosciences Union (EGU) General Assembly 2015, Vienna, Austria, 12-17 April 2015. Main Convenor: G. Iovine, co-Conveners: Johannes Huebl, Christoph Aubrecht, Manuel Pastor - Chairmen: G. Iovine & S.L. Gariano (Oral), G. Iovine & S.L. Gariano (Poster)
- ✓ Session 2.2 "Approaches to landslide risk modelling and mitigation", XII International IAEG Congress, 15-19 September 2014, Torino. Main Convenor: G. Iovine, co-Conveners: C. Aubrecht, D. Cohen, J. Huebl, M. Pastor - Young Researchers: S. Suriano, S.L. Gariano - Chairman: G. Iovine
- ✓ Session NH3.6 "Advanced methods in landslides research II: modelling", European Geosciences Union (EGU) General Assembly 2014, Vienna, Austria, 27 April – 2 May 2014. Main Convenor: G. Iovine, co-Conveners: D. Cohen - Chairmen: H. Huebl & G. Iovine (Oral), G. Iovine & S. Gariano (Poster)
- ✓ Session NH9.12 "Modelling of dangerous phenomena, and innovative techniques for hazard evaluation and risk mitigation", European Geosciences Union (EGU) General Assembly 2014, Vienna, Austria, 27 April – 2 May 2014. Main Convenor: G. Iovine, co-Conveners: J. Huebl, C. Aubrecht, M. Pastor - Chairmen: C. Aubrecht & G. Iovine (Poster)
- ✓ Mini-Symposium 1 "Modeling of dangerous phenomena for risk mitigation", IMACS 2013 World Congress,

- 26-30 August 2013, San Lorenzo de El Escorial-Madrid (Spain). Main Convenor: G. Iovine, co-Conveners: C. Aubrecht, D. Cohen, J. Huebl, M. Pastor - Chairman: M. Pastor
- ✓ Session NATURAL HAZARDS - E 1 "Innovative approaches for landslide hazard evaluation and risk mitigation", Forum Geoitalia 2013, IX Forum Italiano di Scienze della Terra "Le Geoscienze per la Società", Pisa, 15-18 settembre 2013. Main Convenor: G. Iovine, co-Conveners: P. Reichenbach, M. Parise, F. Guzzetti - Chairmen: G. Iovine, P. Reichenbach, M. Parise, F. Guzzetti
 - ✓ Sessione NH9.12 su "Modelling of dangerous phenomena, and innovative techniques for hazard evaluation and risk mitigation. Applications to sinkholes, landslides, floods, lava flows, fires, tsunamis, lightning, and nuclear accidents", European Geosciences Union (EGU) General Assembly 2013, Vienna, Austria, 7-12 April 2013. Main Convenor: G. Iovine, co-Conveners: C. Aubrecht, J. Huebl, M. Pastor, S. Nisio, M. Parise - Chairman: J. Huebl & C. Aubrecht (Oral), S.L. Gariano & G. Iovine (Poster)
 - ✓ Sessione NH3.6 su "Advanced methods in landslides research II: modelling", European Geosciences Union (EGU) General Assembly 2013, Vienna, Austria, 7-12 April 2013. Main Convenor: G. Iovine, co-Conveners: D. Cohen - Chairman: J. Hübl (Oral), S.L. Gariano & G. Iovine (Poster)

FURTHER INFORMATION

Main academic/scientific fitness achieved

- National Scientific Enablement (Competition 1532/2016) in "Applied Geology, Physical Geography e Geomorphology" to: FULL PROFESSOR, and ASSOCIATE PROFESSOR - valid from 04/09/2018 to 04/09/2024.

Research monographs and chapters in collective volumes

- National Scientific Enablement (Competition 2012) in "Applied Geology, Physical Geography and Geomorphology" to both FULL and ASSOCIATE PROFESSOR.
- Main Editor / co-Editor of n.13 Special Issues in the following international Journals: Environmental Modelling and Software, NHESS, Computers and Geosciences, Computational Geosciences, Natural Hazards, Physics and Chemistry of the Earth, CMES, GEORISK. Editor of 1 Special Issue in Geografia Fisica e Dinamica Quaternaria.

Member of the Editorial Board

- Environmental Modelling & Software (EMS, Elsevier), ISSN: 1364-8152, since Mar. 2007.
- Earth System Science Data (ESSD) Copernicus GmbH, Copernicus Publications, ISSN: 1866-3508, eISSN: 1866-3516, Topic (Subject) Editor, since 2009.
- Cogent Geoscience, ISSN: 2331-2041, Editor, from May 2017 to Apr. 2019.
- Member of Editorial Board of the Proceedings for scientific sessions at iEMSs Biennial Meetings (2006, 2008, 2010), and 18th IMACS/MODSIM Conference (2009).
- The Holocene, Journal of Mountain Sciences, Journal of Geophysical research-Solid Earth; Natural Hazards, Natural Hazards and Earth System Sciences, Landslides, Journal of Environmental Radioactivity, Water Resources Research, Journal of Volcanology and Geothermal Research, Environmental Geology, Environmental Modelling & Software; Physics and Chemistry of the Earth; Computers and Geosciences; Computational Geosciences.

Reviewer of manuscripts for international journals (since 2000)

Memberships

- EGU since 2003.
- SGI since 1992.

Evaluation of research results

- Member of Bulletin Board of Referees for Evaluation of Products of Research, VQR 2011-2014.
- Member of REPRIS - Register of Expert Peer Reviewers for Italian Scientific Evaluation, on behalf of Italian Ministry of Education, University and Research.
- Alternate member of Supervisory Committee as IRPI representative, National Operative Program (PON) "Businesses and competitiveness" 2014/2020.
- Member of Bulletin Board of Referees for Evaluation of HORIZON 2020.
- Member of Bulletin Board of Referees for Evaluation of Products of Research VQR 2004-2010 (Earth Science Panel).
- External Assessor for Evaluation of Quality of Research for the Australian National University, from Nov.2009 to Mar.2010.
- Member of Bulletin Board of Referees for Evaluation of Research Projects of the Instruction Ministry, since 2009.

Main invited presentation at conferences

- 3rd Int. Conf. on Debris-Flow Hazards Mitigation: mechanics, prediction, and assessment (Davos). "Panel Discussion (II): Present Status of Research in Debris-Flow Hazards Prediction and Assessment", Chairman: G.F. Wieczorek (USGS). Panelists: G. Iovine; J.C. Bathurst; H. Kienholz; J.J. Major; J.S. O'Brien, Sep.12, 2003.
- 4th Italy-Japan Conf on Sediment Disaster Prevention Technology (Napoli, & Salerno) on "Debris-flow susceptibility mapping through cellular automata modeling" by G. Iovine et al., May 20-22, 2004.

Main participation at committees/boards

- Member of Scientific Board of the SIGEA Int. Conf. "Analysis and mitigation activities of geo-hydrological processes in Italy", Rome, Nov.29,2019.
- Member of Scientific Board of the PhD Course in Science and Environmental Engineering, Constructions and Energy (SIACE), Univ. of Calabria (since XXXIII cycle-June 2017).

- Member of Scientific Board of the 86° Nat. Congr. of It. Geol. Soc., Rende (CS), UNICAL, 18-20 Sept. 2012.
- Member of Organising Committee of the iEMSs 4th Biennial Meeting, Int. Congr. on Environmental Modelling & Software on "Integrating Sciences and Information Technology for Environmental Assessment and Decision Making", Barcelona, July 7-10, 2008.
- Co-Chair of Stream of Sessions on "Global Change and Natural Hazards", 18th IMACS WORLD CONGRESS MODSIM 09 on "Interfacing Modelling and Simulation with Mathematical and Computational Sciences", Cairns, July 13-17, 2009.

ATTACHMENT

- List of the top publications in the main research field (in the last ten years)

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: Rende, 1 June 2024

 Signature: Giulio Iovine

List of the top publications in the main research field (in the last ten years)

1. Ilenia G. Gallo, Mónica Martínez-Corbella, Roberto Sarro, Giulio Iovine, Juan López-Vinielles, Mario Hernández, Gaetano Robustelli, Rosa María Mateos, Juan Carlos García-Davalillo (2021) - An Integration of UAV-Based Photogrammetry and 3D Modelling for Rockfall Hazard Assessment: The Cárcavos Case in 2018 (Spain). Remote Sensing, 13, 3450, ISSN: 2072-4292. DOI: 10.3390/rs13173450
2. Rago V., V. Lupiano, F. Chiaravalloti, G. Chiodo, S. Gabriele, A.D. Pellegrino, O.G. Terranova, Iovine G. (2021) - Geomorphic effects caused by heavy rainfall in the Corigliano-Rossano area (NE Calabria, Italy) on 12 August 2015. Journal of Maps, 17(2), 280-289, ISSN: 1744-5647. DOI: 10.1080/17445647.2020.1867248
3. Lupiano V, Rago V, Terranova OG, Iovine G (2019). Landslide inventory and main geomorphological features affecting slope stability in the Picentino river basin (Campania, southern Italy). JOURNAL OF MAPS, vol. 15, p. 131-141, ISSN: 1744-5647, doi: 10.1080/17445647.2018.1563836
4. TERRANOVA O, GARIANO SL, IAQUINTA P, LUPIANO V, RAGO V, IOVINE G (2018). Examples of Application of GASAKe for Predicting the Occurrence of Rainfall-Induced Landslides in Southern Italy. GEOSCIENCES, vol. 8, UNSP 78, ISSN: 2076-3263, doi: 10.3390/geosciences8020078
5. V RAGO, F CHIARAVALLITI, G CHIODO, S GABRIELE, V LUPIANO, R NICASTRO, AD PELLEGRINO, A PROCOPIO, S SIVIGLIA, OG TERRANOVA, IOVINE G (2017). Geomorphic effects caused by heavy rainfall in southern Calabria (Italy) on 30 October–1 November 2015. JOURNAL OF MAPS, vol. 13, p. 836-843, ISSN: 1744-5647, doi: 10.1080/17445647.2017.1390499
6. TERRANOVA OG, GARIANO SL, BRUNO C, GRECO R, PELLEGRINO AD, IOVINE G (2016). Landslide-risk scenario of the Costa Viola mountain ridge (Calabria, Southern Italy). JOURNAL OF MAPS, vol. 12, p. 261-270, ISSN: 1744-5647, doi: 10.1080/17445647.2016.1195300
7. GARIANO SL, BRUNETTI MT, IOVINE G, MELILLO M, PERUCCACCI S, TERRANOVA O, VENNARI C, GUZZETTI F (2015). Calibration and validation of rainfall thresholds for shallow landslide forecasting in Sicily, southern Italy. GEOMORPHOLOGY, vol. 228, p. 653-665, ISSN: 0169-555X, doi: 10.1016/j.geomorph.2014.10.019
8. TERRANOVA OG, GARIANO SL, IAQUINTA P, IOVINE G (2015). GASAKe: forecasting landslide activations by a genetic-algorithms-based hydrological model. GEOSCIENTIFIC MODEL DEVELOPMENT, vol. 8, p. 1955-1978, ISSN: 1991-959X, doi: 10.5194/gmd-8-1955-2015
9. IOVINE G, GRECO R, GARIANO SL, PELLEGRINO AD, TERRANOVA OG (2014). Shallow-landslide susceptibility in the Costa Viola mountain ridge (southern Calabria, Italy) with considerations on the role of causal factors. . NATURAL HAZARDS, vol. 73, p. 111-136, ISSN: 1573-0840, doi: 10.1007/S11069-014-1129-0
10. Vennari C, Gariano SL, Antronico L, Brunetti MT, Iovine G, Peruccacci S, Terranova O, Guzzetti F (2014). Rainfall thresholds for shallow landslide occurrence in Calabria, southern Italy. NATURAL HAZARDS AND EARTH SYSTEM SCIENCES, vol. 14, p. 317-330, ISSN: 1684-9981, doi: 10.5194/nhess-14-317-2014
11. D'AMBROSIO D, SPATARO W, RONGO R, IOVINE G (2013). Genetic algorithms, Optimization, and Evolutionary Modeling. In: (a cura di) John F. Shroder (Ed. in Chief), Baas, A.C.W. (Ed.), Quantitative Modeling of Geomorphology. Treatise on Geomorphology. p. 1-10, SAN DIEGO: ACADEMIC PRESS, ISBN: 9780080885223, doi: 10.1016/B978-0-12-374739-6.00033-6
12. ARDIZZONE F, BASILE G, CARDINALI M, CASAGLI N, DEL CONTE S, DEL VENTISETTE C, FIORUCCI F, GARFAGNOLI F, GIGLI G, GUZZETTI F, IOVINE G, MONDINI AC, MORETTI S, PANEBIANCO M, RASPINI F, REICHENBACH P, ROSSI M, TANTERI L, TERRANOVA O (2012). Landslide inventory map for the Briga and the Giampilieri catchments, NE Sicily, Italy. JOURNAL OF MAPS, vol. 8, p. 176-180, ISSN: 1744-5647, doi: 10.1080/17445647.2012.694271
13. CAPPARELLI G, IAQUINTA P, IOVINE G, TERRANOVA OG, VERSACE P (2012). Modelling the rainfall-induced mobilization of a large slope movement in northern Calabria. NATURAL HAZARDS, vol. 61, p. 247-256, ISSN: 0921-030X, doi: 10.1007/s11069-010-9651-1