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*RENATO MORBIDELLI*

***CURRICULUM VITAE***

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*Department of Civil and Environmental Engineering  
Perugia University*



A.D. 1308 —  
**unipg**

DEPARTMENT OF CIVIL  
AND ENVIRONMENTAL  
ENGINEERING

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## PERSONAL INFORMATION

Name	<b>RENATO MORBIDELLI</b>
Place and date of birth	PERUGIA (PG), FEBRUARY 07 1968
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## CURRENT POSITION

2022-today	Full Professor of Hydrology and Hydraulic Works at the Department of Civil and Environmental Engineering, Perugia University.
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## PREVIOUS POSITIONS AND ACADEMIC BACKGROUND

2002-2022	Associate Professor of Hydrology and Hydraulic Works at the Faculty of Engineering of the Perugia University until 2013 and at the Department of Civil and Environmental Engineering until 2022.
1997-2002	Assistant Professor of Hydrology and Hydraulic Works at the Faculty of Engineering of the Perugia University.
1998	PhD in Hydronomy, X cycle, Universities of Padova (administrative seat), Perugia and Bari. Thesis title: "Areal infiltration and surface runoff from slope to basin scale", tutor Prof. C. Corradini.
1994	Qualification to the Profession of Engineer achieved with the overcoming of the State examination at Perugia University (II session of 1993). Registration since February 01, 1994 in the Professional Register of the Order of Engineers of Perugia with the number A1255.
1993	Degree in Civil Engineering at Perugia University (evaluation: 110/110 cum laude). Thesis title: "Critical analysis on the performance of the DAMBRK calculation code. Applications to the Montedoglio dam", supervisors Prof. L. Ubertini and Prof. P. Manciola.

## ACADEMIC AND INSTITUTIONAL ROLES

2023	President of 2 Examining Committees for the selection based on qualifications and interview for the recruitment of 2 staff members with the professional profile of Researcher level III at CNR-IRPI in Perugia (Announcements no. 390.64 RIC IRPI and 400/7 IRPI PNRR).
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2023	Member of the Commission of the public competition for the recruitment of 1 unit in the profile of Istruttore Direttivo Tecnico Ingegnere Idraulico Forestale at the Regional Forest Agency (announced by D.D. n. 4255/2022 and 4308/2022 of the Regional Forest Agency).
2022-today	Delegate of the DICA Director for Communication and for the revision and maintenance of the departmental website
2022	Member of the Final Examination Committee for the PhD "International Doctorate in Civil and Environmental Engineering" with administrative seat at Florence University (candidates: Marco Lompi and Matteo Pampaloni; November 21, 2022).
2022-today	Responsible for the University of Perugia under the cooperation agreement with the Department of Fire, Public Rescue and Civil Defence.
2022	Member of the Final Examination Committee for the PhD "International Doctorate in Civil and Environmental Engineering" with administrative seat at Florence University (candidate: Sara Modanesi; June 21, 2022).
2022-today	Quality Manager of the Master's Degree Course in Planet Life Design.
2021	President of the Final Examination Committee for the PhD "International Doctorate in Civil and Environmental Engineering" with administrative seat at Florence University (candidate: Jacopo Dari; March 29, 2021).
2020-today	Member of the Sustainability Commission of the University of Perugia.
2020- today	Member of the Communication Commission of the Department of Civil and Environmental Engineering, Perugia University.
2020- 2022	Member of the Teaching Management Committee of the Master's Degree Course in Planet Life Design (LM12), Perugia University.
2020- 2022	Member of the "Paritetica" Commission of the Department of Civil and Environmental Engineering, Perugia University.
2020- today	Member of the Teaching Board of the International Doctorate Program in "Civil and Environmental Engineering", Perugia University.
2020	Member of the Committee of the Examination for the qualification to the profession of Industrial Engineer, Information Engineer, Junior Industrial Engineer and Junior Information Engineer - I and II Session of the year 2020, Perugia University.
2019- today	Member of the Interuniversity Center for the Environment (CIPLA).
2019- today	Member of the Departmental Spaces Commission of the Department of Civil and Environmental Engineering, Perugia University.
2019-2020	Member of the Relating Commission, Superior Council LL.PP. Affair No. 62/2019 - A13 Bologna-Padova. Widening of the third lane of the Padova-Monselice section. Amount EUR 224,522,639.10.
2019	Member of the Final Examination Committee for the PhD "International Doctorate in Civil and Environmental Engineering" with administrative seat at Florence University (candidates: Costanza Carbonari and Tommaso Picciafuoco; May 3, 2019).
2018-2021	Delegate of the Perugia University for the Interuniversity Experimental Center for Road and Airport Research.
2018	President of the Committee for the "Procedure for the assignment of the integrated services of final/executive design, direction of works, safety coordination and survey and investigation services in support of the design for the intervention called "Collettore di adduzione all'ID dell'ASI di Giamoro". CUP: F93J12000230001- CIG: 7412421B4E.
2018	Member of the Committee for the admission to the "International Doctorate in Civil and Environmental Engineering" with administrative seat at Florence University (XXXIV cycle).
2018	Member of the Committee for the test of knowledge of the Italian language for foreign candidates residing abroad (a.y. 2018/2019).
2018	Member of the Final Examination Committee for the PhD "International Doctorate in Civil and Environmental Engineering" with administrative seat at Florence University (candidate: Luca Ciabatta; June 15, 2018).
2017	Member of the Committee for the admission to the "International Doctorate in Civil and Environmental Engineering" with administrative seat at Florence University (XXXIII cycle).

2016	President of the Final Examination Committee for the PhD at Escuela Internacional de Doctorado de la Universidad de Castilla-La Mancha (candidate: Pablo Duran Barroso; January 27, 2016).
2015-2020	Member of the Teaching Management Committee of the Departmental Degree Courses in Civil Engineering-Architecture (LM4) and Master in Civil Engineering (LM23).
2015	President of the Committee of the Examination for the qualification to the profession of Industrial Engineer, Information Engineer, Civil Engineer, Junior Industrial Engineer, Junior Information Engineer and Junior Civil Engineer - I and II Session of the year 2015, Perugia University.
2015	Member of the Committee for the admission to the "International Doctorate in Civil and Environmental Engineering" with administrative seat at Florence University (XXXI ciclo).
2014-2020	Member of the Teaching Board of the International Doctorate Program in "Civil and Environmental Engineering". National consortium between Florence University, Pisa University and Perugia University. Administrative office at Florence University.
2013	Member of the Technical Commission for the evaluation of projects submitted in support of the practices of concession for hydroelectric purposes referred to R.D. 1775/1933 and R.D. n. 1285/1920 (executive determination of Perugia Province n.374 of Jan 24, 2013).
2011	Member of the Technical-Administrative Committee of Public Works of the Umbria Region (executive determination of the Regional Council n. 935 of Sept 06, 2011).
2010- today	Reference Professor of the Socrates-Erasmus exchanges study area 06.4 Civil Engineering, Perugia University.
2010	Member of the Selection Committee for the "Open procedure for the definitive and executive planning and relative realization of the works for the collection and purification of the circumlacual agglomerations - 1st lot", Umbra Acque.
2009-2014	Member of the Teaching Board of the PhD program in "Civil Engineering and Innovative Materials", Perugia University.
2009	Member of the Commission of the public competition for the position of Hydraulic Engineer of the Umbria Region (D.D. n. 1389 of the Umbria Region, Feb 17, 2009).
2009	Member of the Committee for the admission to the "Civil Engineering Doctorate" with administrative seat at Perugia University (XXV cycle).
2007	Member of the Committee for the Comparative Evaluation Procedure for a position of Assistant Professor at Pavia University (published in the Official Gazette - 4th Special Series n. 91, of Nov 28, 2006).
2005	Member of the Committee of the Examination for the qualification to the profession of Civil Engineer - II Session year 2005, Perugia University.
2004- today	Scientific Director of the Experimental Field of Water Engineering and Agricultural and Forest Hydraulics of the Department of Civil and Environmental Engineering, Perugia University.
2004-2010	Member of the Intercourse Council in Energetic Engineering, Perugia University.
2004	Member of the Committee for the admission to the "Civil Engineering Doctorate" with administrative seat at Perugia University (XXV cycle).
2003-2011	Member of the Intercourse Council in Management Engineering, Perugia University.
2002-2009	Member of the Board of Teachers of the Doctorate in Civil Engineering, Perugia University.
2002	Member of the Committee for the Comparative Evaluation Procedure for a position of Assistant Professor at Mediterranea University (Reggio Calabria) (published in the Official Gazette - 4th Special Series n. 3, Jan 11, 2002).
2002	Member of the Committee for the admission to the "2nd Master in Stabilization and Conservation of Historic Centers in Unstable Territories" (course UM.01.03.33.020), Umbria Region.
2000-today	Member of the Jury for the attribution of research grants, Research Institute for the Hydrogeological Protection of the National Council of the Researches, Perugia.
2000-2013	Member of the Intercourse Council in Civil Engineering, Perugia University.
2000-2001, 2004-2005 and 2006-2007	Member of the Commission for the Scientific-Disciplinary Area "Sciences of Civil Engineering (09)", Perugia University.
1999-2013	Member of the Council of the Engineering Faculty, Perugia University.

1998-2010

Member of the Intercourse Council in Environment Engineering, Perugia University.

## TEACHING ACTIVITY

*The teaching activity described below has been carried out since the academic year (a.y.) 1997/1998 with continuity in the courses provided by the Engineering Faculty until 2013 and then by the Department of Civil and Environmental Engineering of the Perugia University. This activity has consisted of teaching assignments, conducting exercises, assistance and support as supervisor of thesis and tutor of doctoral thesis, tutoring of students, as well as participation in committees for final and degree examinations.*

## UNIVERSITY COURSES

a.y. 2020/2021-today

Lecturer of Hydraulic Risk and Environmental Protection (5 ECTS), within the Master in Planet Life Design (seat of Assisi), Department of Civil and Environmental Engineering, University of Perugia. The course of Hydraulic Risk and Environmental Protection, autonomous in every its element, can assume value of part of the integrated course of Territory and Patrimony.

*The topics covered during the course concern the quantification of the flow design and the implementation of all necessary actions for the mitigation of hydraulic risk. The course is attended, depending on the years, by a variable number of 10-20 students of the above mentioned Master Degree Course.*

a.y. 2008/2009-today

Lecturer of Urban Hydraulics (5 ECTS), within the five-year Degree Course in Engineering-Architecture, Faculty of Engineering (until 2013) and Department of Civil and Environmental Engineering (since Jan 01, 2014), Perugia University. The course of Urban Hydraulics, autonomous in each of its elements, according to the specific a.y. and to the students' program, sometimes assumed the value of a part of the integrated course of Hydraulic and Urban Hydraulics.

*The topics covered during the course concern the mathematical modeling of the main processes of the hydrological cycle with particular regard to precipitation, design of aqueduct and urban drainage networks. The course is attended, depending on the year, by a variable number of 40-70 students of the above mentioned five years Degree Course.*

a.y. 2004/2005-today

Lecturer of Water Resources Management (5 ECTS), within the Master Degree Courses in Civil Engineering and Environmental Engineering, Faculty of Engineering (until 2013) and Department of Civil and Environmental Engineering (since Jan 01, 2014), Perugia University. The course of Water Resources Management, autonomous in all its elements, according to the specific a.y. and to the students' program, sometimes assumed value as a part of the integrated course of Management and Plants for Water Resources or of the integrated course of Hydrology and Water Resources Management.

*The topics covered during the course concern the definition and optimal management of a hydro-system through the use of optimization techniques. Issues related to stochastic processes and data generation are also addressed. The course is attended, depending on the years, by a variable number of 20-50 students of the above mentioned Master Degree Courses.*

a.y. 2004/2005–  
2009/2010

Lecturer of Transport Processes in Fluids (2 ECTS), within the Bachelor Degree Course in Energetic Engineering (seat of Terni), Faculty of Engineering, Perugia University. The course of Transport Processes in Fluids, autonomous in all its elements, according to the specific a.y. and to the students' program, sometimes assumed value of part of the integrated course of Fluid Dynamics.

*The topics covered during the course concerned issues related to the modeling of pollutants in the lower atmosphere layers. The course was attended, depending on the years, by a variable number of 10-20 students of the above mentioned Bachelor Degree Course.*

a.y. 2003/2004–  
2010/2011

Lecturer of Water Resources Management (3 ECTS), within the Bachelor Degree Course in Management Engineering (seat of Terni), Faculty of Engineering, Perugia University. The course of Water Resources Management, autonomous in every its element, according to the specific a.y. and to the students' program, sometimes assumed value of part of the integrated course of Management of Water Resources and Plants.

*The topics covered during the course concerned the definition and optimal management of a*

hydro-system through the use of optimization techniques. The course has been attended, depending on the years, by a variable number of 30-40 students of the above mentioned Bachelor Degree Course.

a.y. 2002/2003

Lecturer of Laboratory of Hydrology and Hydraulic Works, within the Master Degree Courses in Civil Engineering and Environment Engineering, Faculty of Engineering, Perugia University.

The topics covered during the course concerned the development and use of hydrological modeling and included laboratory activities for the observation and subsequent modeling of basic hydrological processes. The course was attended by about 30 students of the above mentioned Master Degree Courses.

a.y. 2000/2001-today

Lecturer of Hydraulic Systems (5 ECTS), within the Master Degree Courses in Civil Engineering, Faculty of Engineering (until 2013) and Department of Civil and Environmental Engineering (since Jan 01, 2014), Perugia University. The course of Hydraulic Systems, autonomous in each of its elements, according to the specific a.y. and to the students' program, sometimes assumed value as a part of the integrated course of Management and Plants for Water Resources.

The topics covered during the course concern the design and construction of plants for the production of hydroelectric energy, irrigation and drainage systems and the main equipment for the measurement of hydrometeorological quantities. The course is attended, depending on the years, by a variable number of 10-30 students of the above mentioned Master Degree Course.

a.y. 1997/1998–  
2001/2002

Tutor of Water Resources Management within the Old Degree (with duration five years) in Civil Engineering and Environmental Engineering, Faculty of Engineering, Perugia University.

a.y. 1997/1998–  
2001/2002

Tutor of Hydrology within the Old Degree (with duration five years) in Civil Engineering and Environmental Engineering, Faculty of Engineering, Perugia University.

Table 1 summarizes the main teaching activities performed.

**Tabella 1.** Summary of teaching assignments/activities by academic year and type (five-year Old Degree – LV, three-year Bachelor Degree – LT, two-year Master Degree of type 1 – LS, two-year Master Degree of type 2 – LM, five-year Degree - LCU) and divided by course of study (Civil Engineering – C, Environmental Engineering – AT, Engineering-Architecture – AE, Management Engineering – G, Energetic Engineering – M, Planet Life Design - PLD) and by role.

a.y.	Tutor	Lecturer	Tutor Degree Thesis (n°)	Tutor Doctoral Thesis (n°)
1996/1997			1 LV	
1997/1998	- Hydrology (LV-C and AT) - Water Resources Management (LV-C e AT)		2 LV	
1998/1999	- Hydrology (LV-C and AT) - Water Resources Management (LV-C and AT)		3 LV	
1999/2000	- Hydrology (LV-C and AT) - Water Resources Management (in parte) (LV -C and AT)		2 LV	
2000/2001	- Hydrology (LV -C and AT) - Water Resources Management (LV -C and AT)	- Hydraulic Systems (LV -C)	5 LV	
2001/2002	- Hydrology (LV -C and AT) - Water Resources Management (LV -C and AT)	- Hydraulic Systems (LV -C)	8 LV	
2002/2003	- Water Resources Management (LV -C and AT)	- Hydraulic Systems (LV -C); - Laboratory of Hydrology and Hydraulic Works (LV -C)	11 LV 4 LT	
2003/2004	- Water Resources Management (LV -C and AT)	- Hydraulic Systems (LV -C); - Water Resources Management (5 ECTS) (LT-G)	5 LV 6 LT	
2004/2005		- Hydraulic Systems (6 ECTS) (LS-C); - Water Resources Management (5	3 LV 4 LT	

	ECTS) (LM-C e AT); - Water Resources Management (3 ECTS) (LT-G); - Transport Processes in Fluids (2 ECTS) (LT-E)	3 LS	
2005/2006	- Hydraulic Systems (6 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Water Resources Management (3 ECTS) (LT-G); - Transport Processes in Fluids (2 ECTS) (LT-E)	5 LV 5 LT 2 LS	
2006/2007	- Hydraulic Systems (6 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Water Resources Management (3 ECTS) (LT-G); - Transport Processes in Fluids (2 ECTS) (LT-E)	3 LV 4 LT 7 LS	1 (XX cycle)
2007/2008	- Hydraulic Systems (6 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Water Resources Management (3 ECTS) (LT-G); - Transport Processes in Fluids (2 ECTS) (LT-E)	1 LT 4 LS	
2008/2009	- Hydraulic Systems (6 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Water Resources Management (3 ECTS) (LT-G); - Transport Processes in Fluids (2 ECTS) (LT-E) - Urban Hydraulics (5 ECTS) (LCU-EA)	1 LT 13 LS	1 (XXII cycle)
2009/2010	- Hydraulic Systems (6 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Water Resources Management (3 ECTS) (LT-G); - Transport Processes in Fluids (2 ECTS) (LT-E) - Urban Hydraulics (5 ECTS) (LCU-EA)	1 LV 4 LS	
2010/2011	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Water Resources Management (3 ECTS) (LT-G); - Urban Hydraulics (5 ECTS) (LCU-EA)	1 LV 5 LS	
2011/2012	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA)	2 LT 6 LS	1 (XXV cycle)
2012/2013	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA)	7 LM	1 (XXVI cycle)
2013/2014	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA)	1 LV 12 LM	
2014/2015	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA)	10 LM	1 (XXVIII cycle)
2015/2016	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA)	1 LT 4 LM	1 (XXIX cycle)



2016/2017	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA)	12 LM	
2017/2018	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA)	10 LM 2 LCU	1 (XXXI cycle)
2018/2019	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA)	3 LM	
2019/2020	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA)	4 LM	1 (XXXIII cycle)
2020/2021	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA) - Hydraulic Risk and Environmental Protection (5 ECTS) (LM-PLD)	6 LM	2 (XXXIV cycle) 1 (foreign)
2021/2022	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA) - Hydraulic Risk and Environmental Protection (5 ECTS) (LM-PLD)	5 LM	
2022/2023	- Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA) - Hydraulic Risk and Environmental Protection (5 ECTS) (LM-PLD)	1 LT 1 LM	
2023/2024	Hydraulic Systems (5 ECTS) (LS-C); - Water Resources Management (5 ECTS) (LM-C e AT); - Urban Hydraulics (5 ECTS) (LCU-EA)	1 LM	1 (XXXVII ciclo)

## SELECTION OF STUDENT COMMENTS

*Selection of "Free Comments" reported by students when completing the "Teaching Evaluation Questionnaires".*

a.y. 2022/2023

course: *Urban Hydraulic* (average student rating: 8.8/10)  
"very clear explanations, teacher absolutely helpful".

a.y. 2022/2023

course: *Hydraulic Systems* (average student rating not available)  
"If there were more good teachers, passionate about teaching and consistent with modern learning issues as Professor Morbidelli is, the university would be a better place."

a.y. 2019/2020

course: *Hydraulic Systems* (average student rating: 9.3/10)  
"The course is clear and understandable thanks to the comprehensive explanations of the professor. Excellent the idea of making visits to the hydroelectric plants in Umbria, although due to covid-19, this year was not possible."

a.y. 2016/2017

course: *Hydraulic Systems* (average student rating: 9.7/10)  
"Professor Morbidelli is truly the best professor I have encountered in the past five years. He is really smart, helpful, super attentive to engage the student and motivate them in their studies and lessons. He is really enjoyable to go to class, which in other courses is really an antithesis. I thank him because he really is an example for all of us and especially should be an example for other faculty."

a.y. 2015/2016	<p>course: <i>Water Resources Management</i> (average student rating: 9.5/10)</p> <p>"A well-structured course, not heavy but at the same time interesting. The teacher, in my opinion, stimulates and manages to keep the students' attention, as well as being very well prepared. A topic that has never been covered and has an important relevance. I am satisfied with the course and the teacher."</p>
a.y. 2014/2015	<p>course: <i>Water Resources Management</i> (average student rating: 9.2/10)</p> <p>"Course taught in an exemplary manner. Lecturer helpful and knowledgeable. Topics covered in a comprehensive manner."</p>
a.y. 2013/2014	<p>course: <i>Urban Hydraulic</i> (average student rating: 9.0/10)</p> <p>"Bravi!!! Between Morbidelli and Meniconi I could not describe who is more inspiring and clear. They are both excellent professors, extremely competent and helpful. Really a course taught excellently. My compliments to the professors and many thanks for your knowledge, transmitted with great competence".</p> <p>course: <i>Water Resources Management</i> (average student rating: 9.7/10)</p> <p>"The course is delivered in an efficient and challenging manner. It is an excellent example of what teaching at university should be like."</p>
a.y. 2012/2013	<p>course: <i>Water Resources Management</i> (average student rating: 9.5/10)</p> <p>"The lectures are taught in a clear and stimulating manner, allowing for excellent discussion between professor and student. The professor is always available for any explanation and the structuring of the course makes it easy to take the exam at the end of the course."</p>
a.y. 2008/2009	<p>course: <i>Water Resources Management</i> (average student rating: 9.1/10)</p> <p>"Good, precise, very clear in explanations."</p> <p>"The teaching is clear, precise and timely. The lectures are interesting and useful to follow for exam purposes. Congratulations to Prof. Morbidelli."</p>
a.y. 2007/2008	<p>course: <i>Water Resources Management</i> (average student rating: 9.6/10)</p> <p>"The course is articulated and run in the best possible way and the lectures given by the lecturer are clear and understandable, which is difficult to find in other subjects"</p> <p>"The lectures are delivered in a timely and comprehensive manner. The course is well developed and the professor is great"</p>
a.y. 2006/2007	<p>course: <i>Hydraulic Systems</i> (average student rating: 9.3/10)</p> <p>"The professor has always been very helpful, knowledgeable and manages to make the lectures clear and interesting. He should be considered as a model for many other faculty to follow."</p> <p>"I wish all courses were taught this way."</p>
a.y. 2005/2006	<p>course: <i>Water Resources Management</i> (average student rating: 9.4/10)</p> <p>"The course is taught in a truly exemplary manner with the course material complete and comprehensive and the lectures delivered clearly and in the time necessary for the student to write notes and reflect of the subject matter. I would like to see this way of lecturing adopted in other courses as well."</p> <p>"Prof. Renato Morbidelli is great, I wish they were all like him!!! To all his colleagues: take example!!!"</p>
a.y. 2004/2005	<p>course: <i>Hydraulic Systems</i> (average student rating: 9.5/10)</p> <p>"Congratulations! Renato, you are one of the best professors I have had in 5 years."</p> <p>" Congratulations for a course taught in a clear yet comprehensive manner."</p>
a.y. 2003/2004	<p>course: <i>Water Resources Management</i> (average student rating: 9.5/10)</p> <p>"Lecturer with innate communication skills, excellent level lectures and very understandable. Fascinating attendance. Wish they were all like this."</p>
a.y. 2002/2003	<p>course: <i>Laboratory of Hydrology and Hydraulic Works</i> (average student rating: 9.1/10)</p> <p>"Classes are taught in a clear and inspiring professional manner. I wish they were all like this!"</p> <p>"A note of merit and great appreciation and esteem for Professor Morbidelli who, in addition to always being very helpful, punctual in his lectures, makes sure that the lectures are always very interesting and engaging"</p>
a.y. 2001/2002	<p>course: <i>Hydraulic Systems</i> (average student rating: 9.3/10)</p> <p>"The course is very interesting also in future and applicative vision, so it could gain more importance than courses of which we do not see the usefulness"</p> <p>"The course is carried out in an excellent way, I wish everyone was like that."</p>
a.y. 2000/2001	<p>course: <i>Hydraulic Systems</i> (average student rating: 9.7/10)</p> <p>"Finally, someone who really makes himself available to students, both for clarification and in</p>

class. The way of explaining is really good and makes the lesson very enjoyable, without stressing the students taking notes, waiting for them to be done. Way to go!"

OTHER TEACHING  
ACTIVITIES

2023	Lecturer of a seminar entitled "There is no water to lose" within the Training Course "Good Practices for a More Sustainable University" organized by Perugia University, December 5 2023 (Engineering Campus - Perugia).
2023	Lecturer of "Water and Environmental Sustainability in a Climate-Changing Context" within the International Summer School organized by the "School of High Specialization and Study Center for the Maintenance and Conservation of Historical Centers in Unstable Territories" (Orvieto and Todi), 20-26 August 2023.
2019	Lecturer of a seminar entitled "The use of rain data in scientific research and in the free profession" organized by the Order of Engineers of the Province of Perugia (Engineering Campus - Perugia).
2019	Lecturer of a seminar entitled "Anthropization of the natural environment: the role of water" within the University course of History of Architecture 1, Degree Course in Engineering-Architecture, Department of Civil and Environmental Engineering, Perugia University (Engineering Campus - Perugia).
2016-2019	Didactic activity for school-work alternation paths. Project title: Hydrometeorology. Department of Civil and Environmental Engineering, Perugia University (Engineering Campus - Perugia).
2018	Lecturer of a seminar entitled "Climate change and main meteorological parameters in Umbria" organized by ARPA-Umbria (Perugia).
2018	Lecturer of a seminar entitled "Climate change and main meteorological parameters in Umbria" organized by Centro Funzionale Decentrato of Umbria Region (Foligno).
2017	Lecturer of a seminar entitled "Impact of temporal data aggregation on heavy rainfall climatic trend evaluation" within the "New frontiers of hydrology and environmental protection", Cooperation perspectives Yazd University (Iran)- Perugia University (Italy) (Engineering Campus - Perugia).
2017	Lecturer of a seminar entitled "The effect of climate change on extreme rainfall events in Umbria" in the framework of the widespread seminar "The flood, the floods. Memory and action" organized by CiNiD and GII (Convento di San Pietro - Perugia).
2016	Lecturer of a seminar entitled "Water, resource or problem" within the University course of History of Architecture 1, Degree Course in Engineering-Architecture, Department of Civil and Environmental Engineering, Perugia University (Engineering Campus - Perugia).
2015	Lecturer of a seminar entitled "The hydrogeological instability. Possible interventions for the safeguard of the territory" within the Study Day "The sustainable city: a cultural choice" (Engineering Campus - Perugia).
2014	Lecturer of a seminar entitled "Hydrological cycle and main interventions of hydraulic arrangement" organized by Centro Funzionale Decentrato of Umbria Region (Foligno).
2003	Lecturer of a seminar entitled "The Hydrological Aspects of the PAI" within the seminars on "Rehabilitation, Hydraulic Defense and Environmental Recovery of the river banks" - Agreement with the Province of Perugia for training courses on: "River rehabilitation: hydraulic and ecological aspects" (Villa Umbra - Perugia).
2003	Lecturer of a seminar within the University Master "Mathematical modeling of hydrogeological disasters" - entitled "Mathematical models for the estimation of local and areal infiltration" (University of Calabria, Cosenza).
2002	Lecturer of "Principles of Hydrology" within the Project "Training course for the maintenance of works of consolidation of unstable territories" code PG.01.03.33.019, Faculty of Engineering, Perugia University.
2000-2001	Lecturer of the Integrated Course of "Hydrological and Hydrogeological Risk" within the Interfaculty Bachelor in "Coordination of Civil Protection Activities" (Foligno).
2000-2001	Lecturer of "Principles of Hydrology", "Complements of Hydrology" within the "Master in Stabilization and Conservation of Historical Centers in Unstable Territories" organized by the "School of High Specialization and Study Center for the Maintenance and Conservation of Historical Centers in Unstable Territories" (Orvieto and Todi).

TUTOR ACTIVITY FOR  
DOCTORAL THESIS

a.a. 2021/2022 – 2023/2024	Tutor of 1 PhD thesis in “Civil and Environmental Engineering”, XXXVII Cycle. Arash Rahi: “Interactions between land cover changes and runoff generation in a climate warming context”, Perugia University.
a.a. 2020/2021 – 2022/2023	Co-advisor of 1 PhD thesis abroad. Salehi Y: “Modeling rainwater infiltration rate based on slope gradient and rainfall intensity in various soils using rainfall simulator”, Zanjan University, Iran.
a.a. 2018/2019 – 2020/2021	Tutor of 1 PhD thesis in “Civil and Environmental Engineering”, XXXIV Cycle. Pampaloni M: “Investigating hydrological parameters for Nature Based Solution characterization”, Florence University and UPM, Universidad Politecnica de Madrid, Escuela Técnica Superior de Ingenieros de Caminos, Canales y Puertos.
a.a. 2018/2019 – 2020/2021	Tutor of 1 PhD thesis in “Civil and Environmental Engineering”, XXXIV Cycle. Modanesi S: “Innovative use of Earth observations into a land surface model for tracking human-induced changes to the terrestrial water cycle”, Florence University and KU Leuven. Agreement for Joint Research Doctoral Thesis (November 2019/January 2020) within the International Doctorate Program in “Civil and Environmental Engineering”, with research topic “Potential benefit of using innovative earth observations for tracking human induced changes in the terrestrial water cycle”, Florence University and KU Leuven.
a.a. 2017/2018 – 2019/2020	Tutor of 1 PhD thesis in “Civil and Environmental Engineering”, XXXIII Cycle. Dari J: “Antropogenic influence on the hydrological cycle: detecting and estimate irrigation through remote sensing soil moisture”, Florence University and Universitat Ramon Llull. Agreement for Joint Research Doctoral Thesis (February/March 2019) within the International Doctorate Program in “Civil and Environmental Engineering”, with research topic “Antropic impacts on the hydrological cycle”, Florence University and Universitat Ramon Llull.
a.a. 2015/2016 – 2017/2018	Tutor of 1 PhD thesis in “Civil and Environmental Engineering”, XXXI Cycle. Picciafuoco T: “On the estimation of soil saturated conductivity: from the plot scale to the field scale”, Florence University and Technische Universität Wien. Agreement for Joint Research Doctoral Thesis (January 08, 2016) within the International Doctorate Program in “Civil and Environmental Engineering”, with research topic “The hydrological balance from the plot scale to the small watershed scale”, Florence University and Technische Universität Wien.
a.a. 2013/2014 – 2015/2016	Tutor of 1 PhD thesis in "Civil Engineering and Innovative Materials", Cycle XXIX. Cifrodelli M: "Local and regional analysis of the intense rainfall regime in central Italy", Perugia University.
a.a. 2012/2013 – 2014/2015	Tutor of 1 PhD thesis in "Civil Engineering and Innovative Materials", Cycle XXVIII. Camici S: "Impact of Climate Change on Extreme Discharge", Perugia University.
a.a. 2010/2011 – 2012/2013	Tutor of 1 PhD thesis in "Civil Engineering and Innovative Materials", Cycle XXVI. Tarpanelli A: "Remote Sensing for Hydraulic Applications in Small-Medium Basins", Perugia University.
a.a. 2009/2010 – 2011/2012	Tutor of 1 PhD thesis in "Civil Engineering and Innovative Materials", Cycle XXV. Rossi E: "Theoretical-Experimental Analysis of the Evolution of the Vertical Profile of Water Content in Soil under Natural Conditions", Perugia University.
a.a. 2006/2007 – 2008/2009	Tutor of 1 PhD thesis in "Civil Engineering", Cycle XXII. D'Elia I: "Modeling for Integrated Air Quality Assessment", Perugia University.
a.a. 2004/2005 – 2006/2007	Tutor of 1 PhD thesis in "Civil Engineering", Cycle XX. Brocca L: "Monitoring and Modeling of Soil Water Content in the Hydrological Practice", Perugia University.

SUPERVISOR ACTIVITY  
FOR DEGREE THESIS

1998-today	Tutor of 200 thesis (experimental, theoretical, or numerical), with deducible arguments from the listed titles (Perugia University): 51 Old Degree thesis (LV - Civil Engineering, Environmental Engineering), 29 Bachelor Degree thesis (LT - Civil Engineering, Environmental Engineering), 120 Master Degree thesis (LS, LM, LCU - Civil Engineering, Environmental Engineering, Engineering-Architecture).
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Old Degree thesis (LV - Civil Engineering, Environmental Engineering)

- Realization of an experimental model for the laboratory study of slope hydrology;
- Hydrological analysis and design proposals for the settlement of the final stretch of the Puglia stream;
- Adaptive conceptual model for real-time flood forecasting;
- Use of a physical laboratory model for slope hydrology analysis;
- Definition of a real-time hydrological telemetry network;
- Spatial variability of soil hydraulic characteristics and runoff production using a laboratory model;
- Pollutant transport in non-stationary situations;
- Real-time flood forecasting with a semi-distributed model;
- Comparative analysis of leakage estimation modeling on moderate-sized watersheds;
- Simulation of flood wave propagation due to dam failure.
- Hydrological analysis related to the Tescio stream catchment area;
- Implementation of the new experimental field of Water Engineering;
- Experimental analysis of the spatial variability of soil hydraulic properties;
- Transport of air pollutants: an analysis with different methodologies;
- Analysis of rainfall for different time aggregation scales;
- An adaptive semi-distributed model for real-time flood prediction;
- The influence of rainfall temporal aggregation on hydrogram development at the small basin scale;
- Sensitivity analysis in the calculation of atmospheric pollutant transport;
- A semi-analytical model for calculating areal mean infiltration in the presence of rainfall and spatially heterogeneous ground conditions;
- Definition of a monitoring network of hydrometeorological and surface water quality quantities;
- The use of similar profiles to calculate surface runoff over small basins;
- Environmental impact and multicriteria analysis of the project alternatives of the agroforestry biomass power plant in the municipality of Città di Castello;
- Runoff estimation on moderate-sized basins: link between initial soil conditions and the value of model parameters;
- Role of slope inclination using a small-scale physical model;
- The role of spatial variability of rainfall and soil hydraulic properties in direct runoff simulation;
- A 2-D infiltration model for verification of laboratory-conducted analyses;
- Experimental investigation of cold recycling using cement and expanded bitumen;
- Analysis of slope hydrology using a small-scale laboratory physical model;
- Tools for modeling, monitoring, and containment of soil pollutant diffusion;
- Role of temporal aggregation of rainfall in hydrogram development at the slope scale;
- Experimental analysis on the accuracy of a semi-analytical model for estimating local infiltration;
- Simplified modeling for the calculation of areal average infiltration at the slope scale;
- Experimental setup for the analysis of basic hydrological processes;
- The variability in three-dimensional space of the main hydraulic properties of a natural soil;
- Experimental analysis of the role of slope inclination in coarse-textured soils;
- The choice of temporal aggregation of precipitation for use in rainfall-runoff transformation models;
- Study of the Petrignano di Assisi variant. Intersection analysis;
- Analysis of soil water content in experimental sites in Central Italy;
- Comparison of different methodologies for the estimation of the design flow rate for the section of Ponte Nuovo on the Tiber river;
- Determination of areal mean rainfall at the small basin scale;
- A simplified model for the rain-flow transformation at the small basin scale;
- Experimental evidence on the run-on process;
- Laboratory analyses aimed at modeling the infiltration process;
- The optimal management of the Pasquarella and Acqua Loreto lifting and storage plants;
- Irrigation systems in the current socio-economic context;
- Verification of the hydrological safety of the Sovara dam on the homonymous stream;
- The Ponte San Giovanni hydroelectric plant on the Tiber River;
- A run-of-river hydroelectric plant on the Chiascio River at Ponte Rosciano;

- State of the hydroelectric exploitation in the province of Perugia;
- Experimental evidence on the process of infiltration and redistribution of water in a stratified soil;
- The irrigation technique and the current framework in the Umbrian territorial context.

Bachelor Degree thesis (LT - Civil Engineering, Environmental Engineering)

- Comparison of different methodologies for estimating design flow rate for the Santa Lucia section of the Tiber River;
- The estimation of the design flow rate using the UHI convolution;
- The use of the evaporimeter for modeling flood levels and soil water content;
- Rainfall possibility indicator lines for gauging stations in the upper and middle Tiber River basin;
- Verification of the Lag-area relationship for the Upper Tiber Valley;
- Rainfall possibility indicator lines for gauging stations in southwestern Umbria;
- An empirical relationship for determining the design rainfall duration;
- An empirical relation for calculating the design flow rate over small and medium-sized basins in the Tiber Valley;
- Determination of temperature profiles in the absence of elevation stations;
- Continuous monitoring of soil water content over the Ponte della Pietra experimental area;
- Atmospheric stability conditions based on ground temperature measurements;
- Analysis on the possibility of determining temperature profiles in the absence of altitude stations;
- Calculation of temperature profiles from the knowledge of ground measurements;
- Determination of temperature profiles in Umbria;
- Wind in Umbria: scenarios for the calculation of pollutant diffusion;
- Calculation of duration curves on sections of interest for hydroelectric production;
- Types of atmospheric stability scenarios for central Umbria;
- Climatological analysis on vertical temperature profiles in Umbria;
- The calculation of the design flow rate of the Calcione dam on the Foenna stream;
- The determination of atmospheric stability conditions in Umbria;
- Relative air humidity in Umbria: scenarios for the calculation of the diffusion of pollutants in the atmosphere;
- Determination of atmospheric stability conditions through the use of fictitious profiles;
- Analysis of effective rain-flow models for use in engineering applications;
- Analysis of direct effective rainfall-flow models for design hydrogram estimation;
- DICA's new weather-climate station;
- Influence of land use on spatiotemporal variability of water content;
- Soil water content trends in different experimental areas;
- The effect of climate change on cumulative annual rainfall in the Umbria region;
- Runoff coefficient analysis: the case of the Chiani River in Morrano

Master Degree thesis (LS, LM, LCU - Civil Engineering, Environmental Engineering, Engineering-Architecture)

- Hydrological safety assessment of Upper Tiber dams;
- Critical analysis of the Kineros 2 model. Application to small basins of the Upper Tiber Valley;
- Temporal stability of soil water content over an experimental area in central Italy;
- The evaluation of the duration of a design reach;
- The spatio-temporal variability of soil water content from slope to small catchment scale;
- Analysis of the hydraulic vulnerability of embankments;
- On the geometric representation of small watersheds;
- The optimal management of a water supply network;
- Diffusion of pollutants in the atmosphere: typical scenarios of cloud cover in Umbria;
- The spatio-temporal characterization of soil water content with TDR technique;
- Spatial variability characteristics of soil water content for a sub-basin of the Arno River;
- Experimental laboratory investigation of point infiltration;
- Indirect measurement of soil water content on experimental areas in the Upper Tiber Valley;
- Meteorological scenarios for atmospheric pollutant diffusion;
- Areal average infiltration in stratified soils in the presence of spatial variability in saturation hydraulic conductivity;

- On the use of temporally stable soil water contents;
- Criteria for choosing empirical relationships for estimating design flow for small basins of the Upper-Middle Tiber River;
- Implementation of an experimental system for complex rainfall simulation on field plots;
- Modeling of soil water content aimed at hydrological balance at the basin scale;
- Experimental analysis on the hydraulic tightness of embankments;
- Hydraulic vulnerability of the Topino river embankments in the urban area of Foligno;
- Evapotranspiration and soil water content modeling;
- The measurement of soil water content aimed at rainfall-runoff modeling;
- Temporal stability analysis of soil water content on the catchment areas of Genna and Caina streams;
- Hydrologic balance issues at the watershed scale;
- Soil water content modeling for river flood defense purposes;
- Spatio-temporal variability of soil water content on the Genna and Caina streams catchments;
- Status of hydroelectric exploitation in the Province of Terni;
- The spatio-temporal variability of soil water content over the Lake Trasimeno catchment area;
- The representation of soil water content over the Lake Trasimeno catchment area;
- Experimental analysis on the sensitivity of infiltration line in embankments to soil hydraulic parameters;
- Comparison of real and estimated air temperature profiles;
- Design of a run-of-river hydroelectric power plant on the Tiber River at Città di Castello;
- Use of neural networks to predict Lake Trasimeno levels;
- Selection criteria among competing applications for hydroelectric derivations;
- Areal reduction factor for design rainfall estimation;
- Estimation of uncertainty in flow determination using the "Rating Curve Model";
- Development of an alternative methodology for rainfall measurement;
- Analysis of the infiltration process in an experimental area of Northern Europe;
- Estimation of river flow using the Rating Curve Model from in-situ and remote data;
- Ground surface inclination and infiltration process;
- Experimental analysis on the performance of the CN-SCS model for the estimation of effective rainfall;
- Experimental evidence on the evolution of the vertical profile of water content in a naturally stratified soil;
- Soil water content monitoring at the watershed scale;
- Experimental analysis on in situ measurement of soil saturation hydraulic conductivity;
- Characteristics and perspectives of micro hydroelectricity in Umbria;
- Experimental analysis of water hammer phenomenon as example of transient flow in supply system of hydropower plants;
- The safeguard of the Petriano aquifer well field through the artificial recharge technique;
- The hydrological balance of Serra di Burano (Umbro-Marchigiano Preappennines) addressed to the use of water resources for drinking water purposes;
- Modeling artificial recharge of the Cannara aquifer system;
- The role of initial soil water content on hydrogram formation at the small basin scale;
- Verification of the representativeness of initial soil moisture categories in the Curve Number method of the Soil Conservation Service;
- Prediction of Petriano aquifer levels using neural networks;
- Breach formation and evolution on a loose material dam;
- A mini-hydroelectric plant on the Racanello stream in Basilicata;
- Proposed modification of the Soil Conservation Service-Curve Number (SCS-CN) method through an experimental analysis at the slope scale;
- The problem of silting of artificial reservoirs in Central Italy;
- The device for the evaluation of competing applications in the granting of concessions for hydroelectric use;
- Proposed modification of the "Soil Conservation Service-Curve Number (SCS-CN)" method by means of a small catchment scale analysis;
- Urban drainage networks and sinkhole formation. The case study of the historic center of Perugia;

- Operational protocol for the regulation of the Trasimeno-Chiusi hydraulic system;
- Rainfall estimation by meteorological radar: the November 2013 flood event in the Chiascio River basin;
- Penstock in Italy: normative evolution, technical characteristics and analysis of the variations in the thickness of some penstocks realized in the last century;
- Experimental analysis on the methods of estimation of potential evapotranspiration at plot scale;
- The role of evapotranspiration in the hydrological balance at plot scale;
- Effects of climate change on heavy rainfall in the Umbria region;
- The optimal management of artificial inflows to Lake Trasimeno;
- The interaction between new hydroelectric derivations and hydrometric monitoring stations;
- Soil erosion and sediment delivery at small watershed scale: the case study of Madonna delle Mosse dam watershed (central Italy);
- The influence of rainfall data availability on LSPP determination;
- A new calibration procedure of the "Soil Conservation Service - Curve Number (SCS-CN)" method for the estimation of effective rainfall;
- A novel procedure for estimating embankment vulnerability;
- Effect of climate change on annual maximum rainfall for periods of several consecutive days in the Umbria region;
- Determination of the geomorphological instantaneous unit hydrogram of an uninstrumented catchment;
- The influence of the temporal aggregation of rainfall on the calculation of maximum annual thicknesses;
- The temporal stability of rainfall produced by frontal systems;
- The effect of climate change on temperatures in two Mediterranean regions;
- The temporal stability of soil water content at the scale of a medium-sized river basin;
- Influence of rainfall on the reduction of road pavement adhesion;
- The temporal distribution of the rains in Umbria in relation to the climatic changes;
- Securing the sewage disposal system of the built-up area of Bastia Umbra;
- Use of a model to estimate the components of the hydrological balance at the parcel scale;
- The influence of climate change on the thermometric indices of the Umbria region;
- Numerical-experimental modeling of the triggering mechanisms of rain-induced landslides;
- The effect of temporal aggregation of rainfall data on climatic indices of extreme rainfall;
- The rainfall grouping factor by empirical method;
- The hydraulic arrangement of the Tomb of Mamia at Pompeii;
- The spatial variability of saturation hydraulic continuity in the Hoal experimental area (Petzenkirchen, Austria);
- Characteristics of underestimation errors in the assessment of maximum annual rainfall thicknesses;
- Areal reconciliation of rainfall extremes for the Umbria region;
- Optimal and automated management of a municipal wastewater treatment plant;
- Analysis of urban wastewater treatment sludge production and management methods;
- Restoring identity to a building;
- Optimal management of the discharge works of an artificial reservoir for the containment of the silting process: the case study of Le Grazie reservoir, Tolentino (MC);
- Urban regeneration of a degraded area: the Alcantara Valley in Lisbon. A project for the reduction of environmental, ecological and social fragmentation and the role of water;
- Micro hydroelectricity in integrated water systems;
- The solid transport process in hill basins: modeling and mitigation interventions;
- Interaction between precipitation and landslides: a time series analysis for Umbria Region;
- Estimation of stream discharge using observations from the next SWOT satellite mission: a river trunk mass balance approach;
- Some analyses related to extreme rainfall events;
- The spatio-temporal variability of extreme rainfall events in Umbria;
- Design of mitigation actions for the silting process of an artificial lake;
- On the fraudulent use of drinking water in agriculture;
- Evaluation of flood flows with ensemble forecasting systems;
- Experimental analysis on the interaction of complex hydrological processes;



- The areal grouping factor of extreme rainfall in the Umbria region using an empirical method;
- The overflow of Le Grazie Lake (Tolentino) with experimental technique;
- Satellite irrigation estimation: evaluation of different evapotranspiration calculation approaches;
- Areal reduction of design rainfall (ARF): the case of Umbria region;
- The evaluation of the main climate indicators in Umbria;
- Interaction between land use change and runoff generation in a climate change context;
- Preserving water in the Athenaeum to build a sustainable future;
- Effect of climate change on rainfall in Umbria;
- BIM modelling applied to the sewerage network of Giglio Castello in Tuscany;
- Radar-pluviometer comparison for precipitation detection;
- Event-scale runoff coefficient analysis
- Assessing the effect of climate change on the runoff coefficient in the Ruhr river basin in Germany;
- Evaluation and analysis of hydrological changes in the Wustebach catchment (Germany) due to partial deforestation;
- Trends of the main climate indicators in Umbria;
- Sediment management in hydropower plants: the innovative technique of sand trap.
- The influence of return period on the areal rainfall reduction factor.

PARTICIPATION IN  
EXAMINATION AND  
GRADUATION  
COMMITTEES

1997/1998 - today

Member of the committees for the final examinations of the following courses:

- Hydrology;
- Hydrology I;
- Hydrology II;
- Hydrology and Hydraulic Works;
- Hydrology e Water Resources Management;
- Hydraulic Works;
- Hydraulic and Urban Hydraulics;
- Transport Processes in Fluids and Soils;
- Water Resources Management;
- Transport Processes and Water Resources Management;
- Transport Processes and Hydraulic Systems;
- Hydraulic Systems;
- River Engineering and Channel Protection Design;
- Hydraulic Risk;
- Sanitary Engineering;
- Laboratory of Hydrology and Hydraulic Works;
- Fluid Dynamic;
- Hydraulic Risk and Environmental Protection.

1997/1998 - today

Member of the Degree Commissions in:

- Civil Engineering (LV);
- Environmental Engineering (LV);
- Civil Engineering (LT);
- Environmental Engineering (LT);
- Civil Engineering (LS/LM);
- Environmental Engineering (LS/LM);
- Engineering-Architecture (LCU);
- Planet Life Design (LM).

## RESEARCH TOPICS

1995 - today

The research activity, started at the Department of Civil and Environmental Engineering of the Perugia University, during the PhD course in Hydrometry (X cycle) was essentially oriented to the study of basic hydrological processes. The activity has continued in the following years oriented in the representation of the process of infiltration in saturated and unsaturated soils, theme on which focuses most of the scientific production until now. At first, the attention was focused on the spatial variability of the hydraulic characteristics of soils and on the realization of modeling for the estimation of areal infiltration. To achieve this goal, a new conceptual model of the infiltration process at the local scale in the case of vertically stratified soils was first formulated. The mathematical structure of this model, suitably integrated taking into account the spatial variability of the hydraulic conductivity of soil saturation, has then allowed the formulation of a model for the estimation of the average areal infiltration at the "plot" scale. The study of the infiltration process has been enriched by laboratory and field experimental activities that have allowed to analyze the vertical profile of the volumetric water content, in the presence or absence of vegetation. These experimental investigations have also allowed to interpret and simulate phenomena such as the formation of the crust on the surface of bare soils subjected to intense rainfall and the formation of a more permeable surface layer in the presence of vegetation. The laboratory activity has been particularly important for the study of the influence of the surface slope on the infiltration process both in grassy and bare soil and to highlight some criticalities in the classical representation of the process. The experimental activity in the field has also allowed to validate the modeling for the estimation of infiltration at the areal scale on vertically homogeneous soil, where the process of infiltration of water coming from areas with saturated surface flows on areas with unsaturated surface (called "run-on") assumes a fundamental role and to conduct studies on the dynamics of evaporation from bare soil in relation to the available volumetric water content.

Another secondary research topic developed since 2017 has concerned the spatial variability of soil saturation hydraulic conductivity and its representation at the plot scale in areal infiltration modeling. In this context, a reliability assessment of the most commonly adopted measurement techniques was performed using a rain-flow approach under steady-state conditions as a "benchmark". Through an intensive field activity, a methodology has been proposed to plan a monitoring campaign of the saturation hydraulic conductivity with a minimum number of measurements, such as to ensure an adequate level of confidence of the average areal value from plot to small catchment scale. In addition, a procedure has been proposed to identify a function ("pedotransfer function") useful to provide an estimate of the saturation hydraulic conductivity at the plot scale.

One area of research addressed since 2015 has concerned the study of the effects of climate change on both rainfall indices (in particular on extreme rainfall), based on an intense validation activity of rainfall data available at the regional scale, and on thermometric indices. In addition, the effects of the reduced temporal resolution of the oldest part of the rainfall time series on the estimation of annual rainfall maxima, on the frequency analysis of extreme rainfall and on climate trends have been investigated.

Recently, a new line of research has been launched aimed at quantitative estimation of irrigation from satellite images.

The main research activities have been therefore developed along the following lines:

- infiltration modeling at the local scale;
- representation of spatial variability in soil saturation hydraulic conductivity;
- modeling of areal average infiltration in vertically homogeneous and stratified soils;
- surface runoff modeling at the slope scale;
- volumetric water content profiles in homogeneous and stratified soils, effects of soil surface slope in the partitioning between surface and subsurface flow, and determination of saturation hydraulic conductivity through experimental field and laboratory analyses;
- characterization of the spatial variability of soil hydraulic properties;
- analysis of extreme rainfall events;
- analysis of atmospheric profiles;
- analysis of climate trends in thermo-pluviometric data series;
- dynamics of atmospheric pollutants in relation to engineering applications (civil-environmental);
- quantification of irrigation through the use of remote sensing.

SCIENTIFIC  
PRODUCTION

1996 - today

Since 1996 a total of 204 publications were produced, divided as follows:

- 90 Papers on International Journals;
- 12 Book Chapters;
- 9 Monographs or Scientific Treatises;
- 4 Papers on National Journals;
- 15 Abstracts on International Journals;
- 29 Papers in Proceedings of International Conferences;
- 17 Papers in Proceedings of National Conferences;
- 25 Abstracts in Proceedings of International and National Conferences;
- 3 Curatorships.

According to the **ISI Web of Science** database, there are currently 92 publications by R. Morbidelli (August 2024). The total citations received are 3173. The average number of citations per article contained in the database is 34.49, with a maximum of 338 citations and second value, in descending order, of 311. The H-index is 31.

According to the **Scopus** database, the publications of R. Morbidelli are currently 105 (August 2024). The total citations received are 3527. The average number of citations per article contained in the database is 33.59, with a maximum of 363 citations and second value, in descending order, equal to 348. The H index is 31.

PERFORMANCE OF THE  
SCIENTIFIC  
PRODUCTION

*The time progression of the scientific production over the period 1996-today is shown in Table 4.*

**Table 4.** Temporal collocation of publications distinguished by type: international journals (RI), national journals (RN), book chapters or editorships (CL), proceedings of international conferences (CI), proceedings of national conferences (CN), monograph or technical report or collection of contributions or abstracts (A)

Year	RI	RN	CL	CI	CN	A	Tot. Year
1996	-	1	-	2	-	-	3
1997	-	-	-	1	-	1	2
1998	1	-	-	1	1	-	3
1999	1	-	-	2	-	-	3
2000	-	-	-	3	1	-	4
2001	1	-	-	2	-	1	4
2002	1	-	1	2	1	-	5
2003	-	-	-	2	-	-	2
2004	2	-	-	1	1	1	5
2005	-	-	-	-	-	-	-
2006	3	1	-	2	1	-	7
2007	2	1	1	1	-	-	5
2008	4	-	2	1	1	1	9
2009	3	-	-	3	-	2	8
2010	1	-	-	-	3	1	5
2011	4	-	-	1	-	1	6
2012	3	-	1	2	2	2	10
2013	1	-	1	-	-	-	2

2014	5	-	-	-	1	1	7
2015	3	-	1	-	-	4	8
2016	3	-	-	1	1	3	8
2017	4	-	1	-	-	-	5
2018	8	-	-	-	2	5	15
2019	8	-	-	-	-	7	15
2020	6	-	1	2	-	4	13
2021	9	1	1	-	1	3	15
2022	7	-	5	-	1	3	16
2023	5	-	-	-	-	5	10
2024	5					4	9
<b>1996-2022</b>	<b>90</b>	<b>4</b>	<b>15</b>	<b>29</b>	<b>17</b>	<b>49</b>	<b>204</b>

EDITORIAL PLACEMENT  
AND IMPACT OF THE  
SCIENTIFIC  
PRODUCTION

Tables 5 and 6 and Figure 1 provide information on the editorial placement and impact on the scientific community of the production in international journals.

**Table 5.** Quartiles of scientific papers in international journals according to the Scopus (SC) and ISI Web of Science (WoS) databases related to the indicated categories and year of publication or the nearest available year.

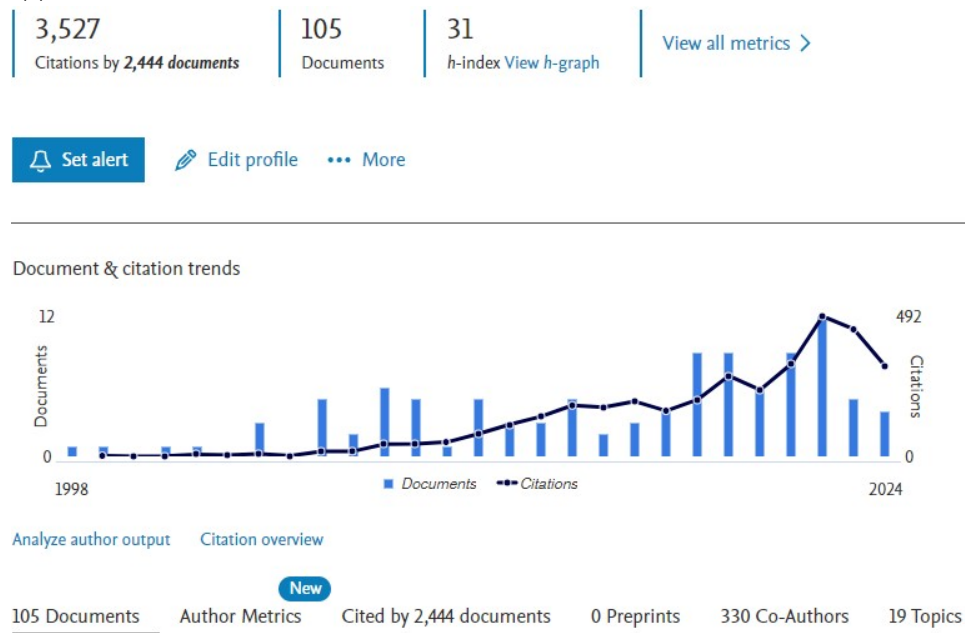
International Journal	Number of papers	SC/Category	WoS/Category
Journal of Hydrology	29	Q1/Water Science and Technology	Q1/Water Resources
Water	10	Q2/Water Science and Technology	Q2/Water Resources
Hydrological Processes	9	Q1/ Water Science and Technology	Q1/Water Resources
Journal of Hydrologic Engineering	8	Q2/Water Science and Technology	Q2/Civil Engineering
Water Resources Research	4	Q1/Water Science and Technology	Q1/Water Resources
Hydrological Sciences Journal	3	Q1/Water Science and Technology	Q2/Water Resources
Hydrology and Earth System Sciences	3	Q1/ Water Science and Technology	Q1/Water Resources
Advances in Water Resources	3	Q1/Water Science and Technology	Q1/Water Resources
Water Resources Management	2	Q1/Water Science and Technology	Q1/Water Resources
Vadose Zone Journal	2	Q1/Soil Science	Q2/Water Resources
Journal Hydrology: Regional Studies	2	Q1/Water Science and Technology	Q1/Water Resources
Agricultural Water Management	1	Q1/Water Science and Technology	Q1/Water Resources
Hydrology Research	1	Q2/Water Science and Technology	Q2/Water Resources
Earth System Science Data	1	Q1/General Earth and Planetary Sciences	Q1/ Multidisciplinary Geosciences
Natural Hazard	1	Q2/Water Resources	Q2/ Multidisciplinary Geosciences
Water, Air, and Soil Pollution	1	Q1/Water Science and Technology	Q2/Water Resources

Atmosphere	1	Q2/Environmental Science	Q3/Meteorology and Atmospheric Sciences
Chaos	1	Q1/Mathematical Physics	Q1/Mathematical Applied
Geoderma	1	Q1/Soil Science	Q1/Soil Science
Remote Sensing	1	Q1/General Earth and Planetary Sciences	Q2/Remote Sensing
Modeling Earth System and Environment	1	Q1/Decision Sciences	Q3/Environmental Sciences
Agronomy for Sustainable Development	1	Q1/Environmental Engineering	Q1/Agronomy
Acta Geophysica	1	Q3/Geophysics	Q4/Geochemistry and Geophysics
Sensors	1	Q1/Instrumentation	Q1/Instruments and Instrumentation
Procedia Earth and Planetary Science	1	-	-
Italian Geotechnical Journal	1	-	-

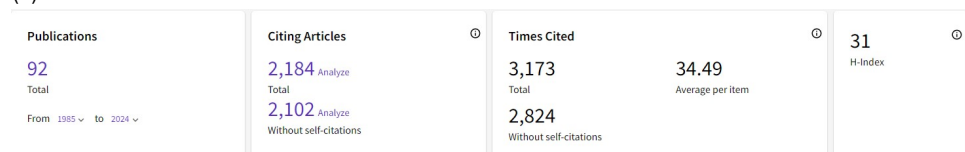
**Table 6.** Bibliometric indicators extracted on May 07, 2024 from Scopus and ISI Web of Science databases.

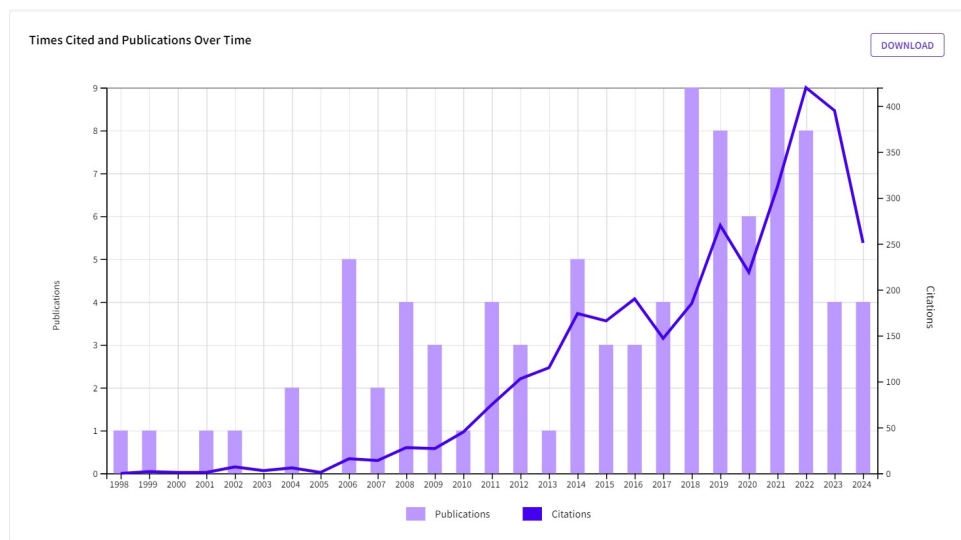
Database	SCOPUS	ISI WEB OF SCIENCE
Number of publications	105	92
H-index	31	31
Number of citations	3527	3173

(a)



(b)





**Figure 1.** Number of publications and citations trends from 1996 to August 19, 2024 in the Scopus (a) and ISI Web of Science (b) databases.

## PATENTS

2023

**MORBIDELLI R., CERNI G., SERAFINI R.** (Inventors), Patent for Utility Model subject of Application No. 202022000002099 with certificate of the Ministry of Enterprise and Industry issued on 14/Dec/2023. Title: "Device for signalling the speed of aquaplaning", Classification: G08G.

## INTERNATIONAL RESEARCH COLLABORATIONS

2020–today

D. Koutsoyiannis – National Technical University of Athens, Athens, Greece, within the writing of the book entitled "Rainfall. Modeling, Measurement and Applications" commissioned by Elsevier.

2020- today

A.A. Albalasmeh - Department of Natural Resources and The Environment, Faculty of Agriculture, Jordan University of Science and Technology, Irbid, Jordan, in the area of the influence of water quality on modeling the infiltration process. Co-authored articles in international journals: n. 1.

2020- today

A. Reza Vaezi – Department of Soil Science, University of Zanjan, Zanjan, Iran, as part of the tutoring of the doctoral thesis of Yasin Salehi with title "Modeling rainwater infiltration rate based on slope gradient and rainfall intensity in various soils using rainfall simulator" (Zanjan University).

2018– today

M.J. Escorihuela, V. Stefan – IsardSAT, Parc Tecnològic Barcelona Activa, Carrer de Marie Curie, Barcelona, Spain, in the area of remote irrigation quantification. International journal articles published in collaboration: n. 2.

2018– today

P. Quintana-Segui – Observatori de L'Ebre (OE), Ramon Llull University – CSIS, Roquetes, Spain, in the area of remote irrigation quantification. International journal articles published in collaboration: n. 2.

2017– today

M.C. Casas-Castillo – Departamentos de Física, ESEIAAT, Universitat Politècnica de Catalunya, BarcelonaTech (UPC), Terrassa, Spain, in the field of rainfall series analysis. Co-authored articles in international journals: n. 2.

2017- today

M. Rahmati – Department of Soil Science and Engineering, Faculty of Agriculture, University of Maragheh, Maragheh, Iran, as part of the construction of a global database of infiltration curves. Articles in international journal published in collaboration: n. 2.

2016– today

H.J. Fowler, S.M. Wilkinson - School of Civil Engineering and Geosciences, Newcastle University, UK, within the research activity on the analysis of extreme rainfall events and climate trends in thermo-pluviometric data series. Articles on international journals published in collaboration: n. 3.

2015– today

G. Blöschl - Institute of Hydraulic Engineering and Water Resources Management, Technische Universität (TU), Wien (AUSTRIA) in the study of spatial variability of soil hydraulic properties. Co-authored articles in international journal: n. 2.

2015- today

J.V. Giraldez-Cervera, J.L. Ayuso-Muñoz, A.P. García-Marín - Departamentos Agronomía,

	Ingeniería Rural, Física Aplicada, Universidad de Córdoba (SPAIN) as part of research activity on evaporation, evapotranspiration, soil erosion, sediment transport, reservoir filling, regional analysis, climate trends. Co-authored articles in international journals: n. 7.
2014-2018	P. Duran Barroso - Departamento de Construcción, Área de Ingeniería Hidráulica, Escuela Politécnica, Universidad de Extremadura, Cáceres (SPAIN), as part of the infiltration process and estimation of excess rainfall at the local scale.
2013-2015	J.-F. Didon-Lescot – UMR -7300 ESPACE CNRS, Departement de Geographie, Université de Nice-Sophia-Antipolis, Nice, France, in soil water content modelling. Co-authored articles in international journals: n. 1.
1999- today	V.P. Singh – Texas A&M University, College Station, Texas (US), within the project CNR-GNDCI “Modellistica fisico-matematica di processi idrologici di base negli studi a scala di bacino” and writing a chapter in the book “Handbook of Applied Hydrology Second Edition”, Vijay P. Singh (Editor), McGraw-Hill.
1996- today	R.S. Govindaraju - School of Civil Engineering della Purdue University, as part of the research activity on semi-analytical mathematical modeling for the representation of the areal infiltration process. Co-authored articles in international journals: n. 26.

## RESEARCH PROJECTS, PARTICIPATION

2023-2025	Participant in the collaboration agreement between CNR-IRSA, CNR-IIT, Central Apennine District Basin Authority and DICA for the implementation of the Project " Central Apennine District Basin Authority - Interventions to improve the quality of water bodies - ACQUACENTRO", valid for the Operational Plan Environment FSC 2014-2020, regarding the activity L.3.1 "Implementation of the water resources management model" (Scientific Responsible for DICA, Prof. S. Casadei).
2018-2019	Participant in the project "Numerical-experimental modeling of rain-induced landslide triggering mechanisms", University Basic Research Fund - year 2018, Perugia University.
2016-2017	Participant in the project "The effect of climate change on extreme rainfall events", University Basic Research Fund - year 2015, University Perugia.
2017-2019	Participant in the project "Innovative monitoring and design strategies for sustainable landslide risk mitigation" - PRIN 2015 (Scientific Responsible of the Research Unit Prof.ssa D. Salciarini, Perugia University - Scientific Coordinator of the Research Program Prof.ssa F. Cotecchia, Politecnico di Bari).
2015-2016	Participant in the project "Infiltration modeling in inclined surface and perpendicularly homogeneous soil, in absence and presence of vegetation", University Basic Research Fund - year 2014, Perugia University.
2011-2014	Participant in the project "Landslide risk mitigation through sustainable interventions" - PRIN 2010-2011 (Scientific Responsible of the Research Unit Prof. C. Tamagnini, Perugia University - Scientific Coordinator of the Research Program Prof. L. Cascini, Salerno University).
2008-2009	Participant to the project "The defense from river floods: realization of an experimental system for the simulation of complex rainfall on plots in the field" - Bando 2008 Fondazione Cassa di Risparmio di Perugia (Scientific Responsible Prof. C. Corradini, Perugia University).
2007-2009	Participant to the Research Unit "Uncertainty and spatial variability of rainfall and soil hydraulic properties in direct runoff simulation" of the project "Spatial variability of soil water content and hydrological response at slope scale" - PRIN 2006 (Scientific Responsible of the Research Unit Prof. C. Corradini, Perugia University - Scientific Coordinator of the Research Program Prof. F. Castelli, Florence University).
2006-2007	Participant to the project "Experimental analysis finalized to the definition of modeling for the preannouncement of the floods in real time on small basins of the Middle - High Tiber Valley" - Announcement 2006 Fondazione Cassa di Risparmio di Perugia (Scientific Responsible Prof. C. Corradini, Perugia University).
2001-2003	Participant to the Research Unit "Uncertainty and spatial variability of rainfall and soil hydraulic properties in direct runoff simulation" of the project "Predictability of extreme hydro-meteorological events and floods in small catchment areas" - PRIN 2000 (Scientific Responsible of the Research Unit Prof. C. Corradini, Perugia University - Scientific Coordinator of the Research Program Prof. F. Castelli, Florence University).
1997, 1998, 1999, 2000, 2001, 2002, 2003	Participant to the project "Physical-mathematical modelling of basic hydrological processes in basin scale studies", U.O. 1.26 of CNR-GNDCI (Scientific responsible Prof. C. Corradini, Perugia

University).  
 1998 Participant to the University project 1998; "Optimal criteria for the evaluation and use of water resources" (Scientific Responsible Prof. C. Corradini, Perugia University).

RESEARCH PROJECTS,  
 COORDINATION

2021-2023 Coordinator WP A within the project "Study of multi-risk scenarios for natural disasters in the area of Central and Southern Italy and Sicily: understanding the past and present to protect the future", University Research Projects, WP 3.1 Disasters and Complex Crises - year 2021, Perugia University.

2019-2020 Coordinator of the project "The effect of climate change on extreme rainfall events, landslides and droughts.", University Basic Research Funding - year 2019, Perugia University.

2007-2013 Coordinator of the project "Experimentation of innovative agronomic techniques and comparative evaluation of seed tobacco varieties for oil production" - Rural Development Program for Umbria 2007-2013, Second phase of implementation of measure 1.2.4 "Cooperation for the development of new products, processes and technologies in the agricultural, food and forestry sectors".

2008 – 2009 Coordinator of the project "Hydraulic safety of embankments and earthen dams", Theme Call, Basic Research 2008 Fondazione Cassa di Risparmio di Perugia.

RESEARCH  
 CONTRACTS

1996 Assignment by the National Research Council (National Group for the Defense from Hydrogeological Catastrophes) for a collaboration finalized to the following research: "Interaction between outflows relative to the Montedoglio Dam and the Cerfone Stream".

1995 Assignment by the Institute of Hydraulics of the Perugia University for a collaboration finalized to the following research: "Determination of morphometric data for the sub-basins of the Tiber River between Ponte Nuovo and the confluence with the Paglia River necessary for the calculation of the Geomorphological UHI according to the scheme used by Corradini et al. (1986) incorporating the Horton-Strahler ordering".

1994 Assignment by the National Research Council (National Group for the Defense from Hydrogeological Catastrophes) for a collaboration finalized to the following research: "The propagation of waves at steep fronts".

1993 Assignment by the Institute of Hydraulics, Perugia University for a collaboration finalized to the following research: "Analysis and archiving of simulation studies of the propagation of the wave of submersion produced by the collapse of the dams and the opening of the drains (as provided respectively by the circulars No. 352 of Dec 04, 1987 and No. 125 of Aug 28, 1986) received by the Service Dams at the Ministry of Public Works.

RESEARCH  
 AGREEMENT

2023 Scientific Responsible of DICA of the study " Evaluation of runoff coefficient trends over time in the Umbria region in the main closure sections where hydrometers managed by the Regional Hydrographic Service are present ", assigned by Umbria Region.

2022 DICA Scientific Responsible for the agreement with the Municipality of Bettona for 'the study for the realisation of co-working spaces and temporary work rooms with related communication activities and promotional campaign".

2022 DICA Scientific Responsible for the following Memorandum of Understanding with the Hansgrohe: "Studies and researches in the field of water-saving communication and technology".

2021 Participation in the research group of the Department of Civil and Environmental Engineering of Perugia University (DICA) within the contract for third parties having as object: Activity of technical



	and scientific assistance, aimed at studying the main emissions and the main environmental factors involved in the expansion of the landfill for non-hazardous waste of Borgo Giglione; Customer: Trasimeno Servizi Ambientali Spa with headquarters in Magione (PG). Scientific Responsible DICA: G. Gigliotti.
2021	Scientific Responsible of DICA of the study "Determination of the areal grouping factor of extreme precipitations in the Umbria region", assigned by Umbria Region.
2021	DICA Scientific Responsible for the following Memorandum of Understanding with Hansgrohe: "Development and dissemination of communication content and research on water saving to be developed within the disciplinary field through the teaching of the Department of Civil and Environmental Engineering as a context of implementation".
2020	DICA Scientific Responsible for the study "Potential of satellite data for the determination of irrigation practices at different spatial scales and evaluation of their impact on the hydrological cycle", assigned by IRPI-CNR of Perugia.
2020	DICA Scientific Responsible for the contract on behalf of third parties having as object: Research and development activities for the study of sediment removal in the artificial reservoir Le Grazie in Tolentino (MC) through a new custom process of sludge dilution in the volume of water turbinated in compliance with the environmental parameters of the Chienti river and the functional parameters of the turbine of the hydroelectric plant and of the potabilization plant placed downstream; evaluation of the plant able to manage automatically the dilution activity and the replication on other reservoirs; Customer: Azienda Specializzata Settore Multiservizi (ASSM) Spa based in Tolentino (MC)
2020	Participation to the research group of DICA within the contract for third parties having as object: Revision and integration of the management project of the artificial reservoir of Le Grazie lake (according to D.L. 152/99 and D.M. Jun 30, 2004) - Municipality of Tolentino; Customer: Azienda Specializzata Settore Multiservizi (ASSM) Spa with seat in Tolentino (MC). DICA scientific coordinators: A. Flammini, C. Saltalippi.
2018-2019	Participation to the research group of DICA within the contract for third parties having as object: Assignment of consultancy and support to the design and production of the technical-economic feasibility project concerning the mitigation and prevention of the silting up of the lake Le Grazie with execution of hydraulic works for the recovery of the useful volume of reservoir (second lot) - Municipality of Tolentino; Customer: Azienda Specializzata Settore Multiservizi (ASSM) Spa based in Tolentino (MC). DICA scientific coordinators: A. Flammini, C. Saltalippi.
2018	Participation to the DICA research group within the contract for third parties having as object: Updating of the Management Project and drafting of the Operational Plan (according to D.L. 152/99 and D.M. Jun 30, 2004) of the Le Grazie reservoir, Tolentino (MC); Customer: Azienda Specializzata Settore Multiservizi (ASSM) Spa with seat in Tolentino (MC). DICA scientific coordinators: A. Flammini, C. Saltalippi.
2018	Participation to the DICA research group within the contract for third parties having as object: Drafting of the operational plan of the Management Project (according to D.L. 152/99 and D.M. Jun 30, 2004) of the Le Grazie reservoir, Tolentino (MC), concerning the operational modalities of execution of the spillway intervention; Customer: Azienda Specializzata Settore Multiservizi (ASSM) Spa with seat in Tolentino (MC). DICA Scientific Managers: A. Flammini, C. Saltalippi
2017	Participation to the research group of DICA in the framework of the research agreement "Agreement for applied research in areas related to the prevention of hydrogeological risk between the Department of Civil and Environmental Engineering-University of Perugia and the Functional Center of the Service Organization and Development of the Civil Protection System of the Umbria Region". Scientific coordinators DICA: A. Flammini, D. Salciarini.
2016-2017	Participation in the DICA research group within the framework of the contract stipulated with the Pompeii Superintendency for the performance of research and teaching activities aimed at the enhancement, fruition and dissemination of the Pompeii site, with specific object "Area of the Tomb of Mamia: cognitive investigation campaign and preliminary project for the restoration and recovery of a monumental funerary complex of the Herculaneum Gate Necropolis"; Scientific Managers: Prof. Massimo Osanna (Soprintendenza), Prof.ssa Concetta Masseria and Prof. Ing. Filippo Ubertini (DICA).
2016	Participation in the research group of DICA in the framework of the Memorandum of Understanding between the Municipality of Bastia Umbra and the DICA for the collaboration on environmental issues, with particular reference to the optimization of hydraulic networks and the defense of the territory.
2015	Scientific Responsible DICA of the contract for third parties having as object: The drafting of the hydrological-hydraulic reevaluation study, according to art. 4 co. 1 of D.L. Mar 03, 2004 n. 79, concerning the dam of Le Grazie Lake in the Municipality of Tolentino (MC); Customer: Azienda Specializzata Settore Multiservizi (ASSM) SpA based in Tolentino (MC).

2010	Scientific Responsible DICA for the agreement with Immobiliare Santa Elisabetta s.r.l. for "Evaluation of the hydraulic compatibility of the intervention of arrangement realized by Immobiliare Santa Elisabetta s.r.l. in Costano - Municipality of Bastia - Subdivision Plan Compartment C3 P.R.G. D.M. 2336/71 and Compartment C2 Variante Generale PRG DCC 112/96".
2005	Participation to the research group of DICA within the research agreement with the Research Institute for the Hydrogeological Protection of the National Council of Researches (CNR-IRPI) and the Ente Irriguo Umbro-Toscano entitled: Studies on the hydrological-hydraulic revaluations of the dams of Montedoglio on the Tiber River, of Casanova on the Chiascio River, of Sovara on the homonym Stream and of Calcione on the Foenna Stream.
2005	Participation to the DICA research group in the framework of the research agreement with CNR-IRPI and the Po River Basin Authority entitled: Estimation of the flow rate in sample hydrometric sections of the Po River and its main tributaries with surface current measurements. Scientific Responsible DICA: C. Corradini.
2003	Participation to the research group of DICA within the research agreement with the Regional Agency for Environmental Protection of Umbria (ARPA-UMBRIA) entitled: Collection, adjustment and integration of information, in collaboration with APAT thematic experts. Natural water cycle: inputs, outflows, accumulations. Scientific Responsible DICA: C. Corradini.
1999-2001	Participation to the research group of DICA in the framework of the research agreement with Umbria Region entitled: Project for the realization of flooding maps of the main regional catchment areas. Scientific responsible of DICA: P. Manciola.

#### BOARDS AND COMMITTEES

2022	Member of the Technical Advisory Committee of the "27th International Conference on Hydraulics, Water Resources and Coastal Engineering, HYDRO 2022 International", Indian Society for Hydraulics (ISH), Chandigar, India, December 22-24, 2022.
2021	Member of the Technical Advisory Committee of the "26th International Conference on Hydraulics, Water Resources and Coastal Engineering, HYDRO 2021 International", Indian Society for Hydraulics (ISH), Surat, Gujarat, India, December 23-25, 2021.
2020	Member of the Scientific Committee of the "Trans-Asia IWA Young Water Professionals Conference on Smart Technologies for Water and Wastewater Treatment", Vellore, India, December 16-19 2020.
2019	Member of the Organizing Committee of the Seminar "The knowledge of rainfall as a tool for the mitigation of the effects of a changing climate", Perugia.
2017	Member of the Scientific Committee of the Study Day "La diga di Valfabbrica: the state of the works and the management of water resources", Valfabbrica (PG).
2017	Member of the Workshop Organizing Committee "New frontiers of hydrology and environmental protection", Prof. Farhad Nejadkoorki, within the "Cooperation Perspectives" Yazd University (IRAN) – Perugia University.
2016	Member of the Organizing Committee of the Seminar entitled "Hydrological and hydraulic criticality in the prediction of flooding phenomena", part of a series of seminars organized simultaneously in different universities and research institutions throughout the country as part of the national Seminar Diffused "The flood, the floods: Memory and Action", in the recurrence of the flood of November 4, 1966 of the city of Florence.
2016-today	Member of the Italian Group of Hydraulics (GII).
2016-today	Member of the Italian National Committee for the International Commission on Irrigation and Drainage (ITAL-ICID).
2015-today	Registered in REPRISE (register of scientific experts established at MIUR) for the section: Basic research - ERC Sectors: Civil engineering, architecture, maritime/hydraulic engineering, geotechnics, waste treatment (PE8_3), Hydrology, water and soil pollution (PE10_17) Scientific disciplinary fields: Hydraulic and maritime constructions and hydrology (ICAR/02).
2013	Member of the Organizing Committee of the Florisa Melone Memorial Conference, Assisi (PG).
2008	Member of the Organizing Committee of the XXXI National Conference of Hydraulics and Hydraulic Works, Perugia, Italy.

## EDITORIAL ACTIVITY

2023	Guest Editor Special Issue: Interactions between Land Cover Changes and Runoff and Subsurface Flow Generation in Agro-Urban Systems in the Context of Climate Warming, Water, MDPI.
2022	Guest Editor Special Issue: "Interactions between Land Cover Changes and Runoff Generation in a Climate Warming Context", Frontiers in Water.
2021	Guest Editor Special Issue: "Mechanisms and processes of water movement, contamination, protection and sustainable management of groundwater, aquifers and geothermal resources", Environmental Earth Sciences, Springer.
2021- 2024	Section Board Member for Water, MDPI.
2021	Member of the Committee for the "Best Paper Award 2021" for Water.
2020- 2024	Editorial Board Member for Water, MDPI.
2020- 2022	Guest Editor Special Issue: "Time-resolution of the rainfall data and its role in the hydrological analyses", Water, MDPI.
2019- 2022	Editor of the book entitled "Rainfall. Modeling, Measurement and Applications", Elsevier.
2019-2020	Guest Editor Special Issue: "Rainfall Infiltration Modeling", Water, MDPI.
2018- today	Associate Editor for Journal of Hydrology X, Elsevier.
2018- 2019	Guest Editor Special Issue: "Determination of Soil Hydraulic Properties", Journal of Hydrology, Elsevier.
2014- today	Associate Editor for Journal of Hydrology, Elsevier.

## REVIEWER ACTIVITY

2005-today	Reviewer for the following international journals: <ul style="list-style-type: none"><li>- Journal of Hydrologic Engineering – ASCE (since 2005);</li><li>- Computer &amp; Geosciences – Elsevier (since 2007);</li><li>- Hydrology and Earth System Sciences – Copernicus Publications (since 2007);</li><li>- Journal of Hydrology – Elsevier (since 2008);</li><li>- Natural Hazards – Springer (since 2008);</li><li>- Water Resources Management – Springer (since 2008);</li><li>- Physics and Chemistry of the Earth – Elsevier (since 2009);</li><li>- Environmental Modelling &amp; Software – Elsevier (since 2009);</li><li>- Natural Hazards and Earth System Sciences – Copernicus Publications (since 2010);</li><li>- Geoderma – Elsevier (since 2011);</li><li>- Advances in Water Resources – Elsevier (since 2011);</li><li>- Environmental Earth Sciences - Springer (since 2013);</li><li>- Journal of Applied Geophysics – Elsevier (since 2014);</li><li>- Water Resources Research – Wiley (since 2014);</li><li>- Land Degradation and Development – Wiley (since 2018);</li><li>- Journal of Environmental Management – Elsevier (since 2018);</li><li>- Environmental Science – Springer (since 2019);</li><li>- Hydrology Research – IWA Publishing (since 2019);</li><li>- Environmental Monitoring and Assessment (since 2021);</li><li>- Environmental Challenges – Elsevier (since 2021);</li><li>- Journal of Hydrology: Regional Studies – Elsevier (since 2021);</li><li>- Soil &amp; Tillage Research – Elsevier (since 2021);</li><li>- Scientific Data – Nature Research, Springer (since 2022).</li></ul>
2008-today	Reviewer for the following national journals: <ul style="list-style-type: none"><li>- L'Acqua – All (since 2008);</li><li>- Bollettino Geofisico – AGI (since 2008).</li></ul>

**SCIENTIFIC  
PUBLICATIONS**

PAPERS ON  
INTERNATIONAL  
JOURNALS

- 2024 RAHI A., RAHAMATI M., DARI J., BOGENA H., VEREECKEN H., **MORBIDELLI R.**, "Combining signal decomposition and deep learning model to predict noisy runoff coefficient", *Journal Hydrology*, 641, 131815, 2024, <https://doi.org/10.1016/j.jhydrol.2024.131815>, Scopus Code:....., WOS Code: .....
- 2024 DJELLIT L., LAOUACHERIA F., **MORBIDELLI R.**, "Assessment of the impact of LULC changes on peak discharge and runoff volume in Kebir river catchment Northeastern of Algeria", *Modeling Earth System and Environment*, 2024, <https://doi.org/10.1007/s40808-024-01981-w>, Scopus Code: 2-s2.0-85188523616, WOS Code: 001190490100002.
- 2024 DARI J., **MORBIDELLI R.**, QUINTANA-SEGUI' P., BROCCA L., "The Temporal-Stability-based Irrigation MAPping (TSIMAP) method: A virtuous trade-off between accuracy, flexibility, and facility for end-users", *Water*, 16, 664, 2024, <https://doi.org/10.3390/w16050644>, Scopus Code: 2-s2.0-85187479126, WOS Code: 001183085800001.
- 2024 SALTALIPPI C., **MORBIDELLI R.**, CORRADINI C., FLAMMINI A., BARCA E., DARI J., "Investigation of new approaches for the determination of the annual maximum rainfall depths of different durations", *Journal of Hydrology*, 631, 130809, 2024, <https://doi.org/10.1016/j.jhydrol.2024.130809>, Scopus Code: 2-s2.0-85185488952, WOS Code: 001182517700001.
- 2024 FLAMMINI A., **MORBIDELLI R.**, DARI J., PORCEDDU P.R., MORAMARCO T., SALTALIPPI C., "A new empirical formulation of the areal reduction factor for design rainfalls applied to the Umbria Region in Central Italy", *Journal of Hydrologic Engineering*, 29(2), 04024003, 2024, <https://doi.org/10.1061/jhyeff.heeng-6076>, Scopus Code: 2-s2.0-85184838361, WOS Code: 001162907100006.
- 2023 DARI J., FLAMMINI A., **MORBIDELLI R.**, RAHI A., SALTALIPPI C., "Evolution of freshwater availability in a climate-changing Mediterranean context: The case of Umbria region, central Italy", *Hydrological Processes*, 37(12), e15050, 2023, <https://doi.org/10.1002/hyp.15050>, Scopus Code: 2-s2.0-85180153478, WOS Code: 001126214200001.
- 2023 RAHI A., RAHAMATI M., DARI J., SALTALIPPI C., BROGI C., **MORBIDELLI R.**, "Unraveling hydroclimatic forces controlling the runoff coefficient trends in central Italy's Upper Tiber Basin", *Journal Hydrology: Regional Studies*, 50, 101579, 2023, <https://doi.org/10.1016/j.ejrh.2023.101579>, Scopus Code: 2-s2.0-85177866256, WOS Code: 001125658800001.
- 2023 GOYAL A., FLAMMINI A., **MORBIDELLI R.**, CORRADINI C., GOVINDARAJU R.S., "Impact of observation thresholds in the assessment of field-scale soil saturated hydraulic conductivity", *Journal of Hydrology*, 626, 130310, 2023, doi: 10.1016/j.jhydrol.2023.130310, Scopus Code: 2-s2.0-85174447775, WOS Code: 001108699400001.
- 2023 GOYAL A., FLAMMINI A., **MORBIDELLI R.**, CORRADINI C., GOVINDARAJU R.S., "Role of in-situ point instruments in the estimation of variability in soil saturated hydraulic conductivity", *Hydrological Sciences Journal*, 68(3), 448-461, 2023, doi:10.1080/02626667.2022.2162407, Scopus Code: 2-s2.0-85148280745, WOS Code: 000930522800001.
- 2023 FLAMMINI A., **MORBIDELLI R.**, CORRADINI C., DARI J., SALTALIPPI C., GOYAL A., GOVINDARAJU R.S., "A statistical approach for the assessment of the saturated hydraulic conductivity applied to an Austrian region", *Journal Hydrology: Regional Studies*, 45, 101310, 2023, <https://doi.org/10.1016/j.ejrh.2022.101310>, Scopus Code: 2-s2.0-85145056509, WOS Code: 000976095500001.
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