

PERSONAL INFORMATION

Guido Rianna

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Nationality Italian

POSITION

Researcher

WORK EXPERIENCE

01/04/2012–Present

Researcher

CMCC Foundation Euro-Mediterranean Center on Climate Change - Regional Models and geo-Hydrological Impacts (REMHI) Division, geo-Hydrological Impacts (HI), Research Unit Leader, Capua (CE) (Italy)

He is supervising the research unit aimed to assess the potential variations induced by climate changes (CC) in magnitude and frequency of weather-induced geological, hydrological and hydraulic hazards.

Furthermore, his main topics for research concern the effects of CC on landslide events, urban environments, construction standards, water resources and the adaptation role of Nature Based Solutions.

Then, he has deeply involved in different National and International research projects:

-GEMINA Project 2012-2015 [Fondo Integrativo Speciale per la Ricerca-Piano di Consolidamento, Potenziamento tecnologico, ampliamento e sviluppo del Centro Euromediterraneo per i Cambiamenti Climatici-Special Integrative Fund for Research-Consolidation Plan, Improvement technological expansion and development of the Euro-Mediterranean Centre for Climate Change] i) investigating the potential effect of climate changes on landslide phenomena in some hot spots of the Mediterranean region, ii) developing approaches to coupling the findings of climate simulations with impact models (bias correction approaches, stocastical methods) and iii) evaluating the variations in soil water balance and main components of hydrological balance for China country under current and future climate conditions

-NEXTDATA Italian Project 2014-2016 [Un sistema nazionale per la raccolta, conservazione, accessibilità e diffusione dei dati ambientali e climatici in aree montane e marine-A national system for the collection, preservation, accessibility and diffusion of environmental data and climate in mountain and sea areas] developing expeditious approaches to assess possible variations induced by climate change in subdaily rainfall patterns mainly for areas orographically complex

- FP7-security-606799 INTACT [On the Impact of Extreme Weather on Critical Infrastructures] The project draws together existing knowledge on extreme weather events, climate change and critical infrastructure in Europe to provide a set of guidelines, the INTACT Reference Guide, to aid policy makers, decision makers and other stakeholders in setting up durable and lasting infrastructure. He is involved in WP5 about Case Studies; in the specific, he was Pilot case coordinator for test case regarding fast landslides phenomena occurring in pyroclastic cover of Campania Region. to this aim, he was deeply involved as in modeling activities for landslide dynamics from triggering to propagation as in stakeholder involvement and knowledge co-production evaluations

- INTERREG-CENTRAL EUROPE PROLINE [PROLINE-CE Efficient Practices of Land Use Management Integrating Water Resources Protection and Non-structural Flood Mitigation Experiences] He is cluster leader for investigation on Best Management Practices in riparian areas of Central Europe; pilot cases: Po River Basin and Danube Bend; he was National Responsible for WP T1 "Capitalisation: Capacity building and stakeholder engagement". He led the report WT2.3.3 aimed to assess the potential impacts of climate Changes on quantity and quality of drinking water resource in Central Europe Region. Since June 2018, he was leader of WP T3 "Synopsis: Vision and guidance" promoting a common methodology and a vision for integrated management for water resources summarized in a CE Transnational Guide towards Optimal WATER REGime (GOWARE).

Currently, it is deeply involved in **PNAC Piano Nazionale di Adattamento ai Cambiamenti Climatici** as **scientific advisor** on two aspects: geo-hydrological hazard and urban settlements.

Moreover, he is collaborating to definition of homogeneous climatic areas required in first part of Plan. He has been deeply involved in **SNAC – Elementi per l'elaborazione della Strategia Nazionale di Adattamento ai Cambiamenti Climatici (Elements for the development of the National Strategy for Adaptation to Climate Change)** funded by Ministry of Environment and Protection of Land and Sea as expert on geological and hydrological hazards.

EEA Consultant for report "Climate change adaptation and disaster risk reduction in Europe - Synergies for the knowledge base and policies" (2017) and Scoping Paper to be published in 2019, which should explore the different approaches on how to address the topic of EbA and eco-DRR.

Teaching assistant (cultore della materia) at Second University of Naples for courses of "Basics of Geotechnical Engineering" and "Slope Stability" (respectively Prof. Picarelli and Cornegna).

In 2019, he will have an invited Plenary Lecture at cross-disciplinary workshop. MUSLOC 2019 (Barcelona, Spain, 19 – 20 September 2019).

We are appreciative of your participation in the Technical Programme

Since 2018, he is convener in European Geophysical Union General Assembly for session NH3.2/CL2.24 "Effects of climate and environmental changes on landslides"

In 2017, he was invited speaker in "FIRST JTC1 WORKSHOP ON ADVANCES IN LANDSLIDE UNDERSTANDING" in Barcelona with a talk concerning "HYSTERESIS PROCESSES AND EFFECTIVE RAINFALL HISTORIES"

In November 2015, co-organizer and chairman for the Young Session of IV Italian Workshop on Landslides

In 2012 and 2014, at the University of Naples "Federico II", as part of the course for PhD students on "Modeling the interpretation of the observed physical quantities", held a series of lectures on: modeling coupled thermo-hydraulic processes in the soil, modeling evaporative processes, interpretation of case-histories of landslide modeling of rainfall thresholds for early warning systems.

In May 2014, he was Member of the Scientific Committee of Second Conference of SISC (Società Italiana Scienze del Clima), Venice, September 2014

On 16-23 November 2013, at CRAES Chinese Research Academy of Environmental Sciences (Beijing, China) he held a series of lectures about landslide classification and main features, triggering and hard and soft mitigation countermeasurements

On March 2013 at National Council of Research (CNR) of Lamezia Terme (Italy), within the Italian Project I-AMICA Infrastruttura di Alta Tecnologia per il Monitoraggio Integrato Climatico-Ambientale-Infrastructure of High Technology for Integrated Climate and Environmental Monitoring, he held a series of lectures about the role of monitoring for landslide risk.

In July 2018, he attended in Montpellier the 4th edition of the "**International Summer School : Concepts and tools to engage in knowledge co-production and public participation**"

In 2015, he attended training courses about installation, maintenance and management of ceilometer (CAMPBELL LTD) and disdrometer devices (OTT).

He is currently peer reviewer for several journals concerning landslide dynamics, climate change adaptation and urban environment.

01/11/2011–31/03/2012 **Researcher**

University of Naples "Federico II", Naples (Italy)

research fellowship on "Artificial and natural slope stability in static and seismic conditions"

The activities are essentially based on the study of soil-atmosphere interaction for the assessment of the conditions triggering landslides in pyroclastic soils both by physical and numerical modeling. The analysed case-history concerns Nocera Inferiore landslide (4 March 2005).

01/05/2011–30/06/2011 **Researcher**

University of Naples "Federico II", Naples (Italy)

The collaboration took place as part of the project funded by the European SAFELAND (FP7).

he prepared a contribution on three issues:

the first focuses on physically based models for the prediction of landslide phenomena, their calibration, and the assessment of elements such as the dependence of the response by the DEM resolution or the algorithm implemented by the direction of the flow of runoff.

the second based on the study of commercial codes or developed only for research purposes for the

prediction at scale slope of the landslide phenomena.

the third based on a sensitivity study about the effects of soil hydraulic behaviour, slope geometry, upper and boundary conditions and rainfall pattern on landslide triggering. The study is carried out through the commercial code (SEEP/W).

15/05/2007–01/11/2007

Researcher

Euro-Mediterranean Center for Climate Change
Maiorise, 81043 Capua (CE) (Italy)

The main research topics were:

- Study of the simulation models for estimating the interaction between soil and atmosphere (used in the field of meteorology and atmospheric sciences)

- Numerical analysis for the assessment of conditions at the interface between soil and atmosphere through the finite difference code TERRA-LM (Fortran 90), the code is currently used by the consortium COSMO (Consortium for Small-Scale Modeling) for operational forecasting of weather conditions; the consortium consists of the national weather services of Italy, Germany, Russia, Romania, Switzerland and Greece.

Business or sector research

EDUCATION AND TRAINING

01/11/2007–31/10/2010

PhD course

EQF level 6

University of Naples "Federico II"
Piazzale Tecchio, 80, 80125 Napoli (Italy)

scholarship holder

PhD thesis: Sistemi di allarme per colate rapide in terreni piroclastici: elaborazione di modelli previsionali (italian)

Early warning systems for landslides affecting pyroclastic soils: development of predictive models

Tutor: Prof.Eng.Luca Pagano

The thesis elaborates some innovative approaches for the timely prediction of flowslides, to be used in alarm systems designed to reduce risk conditions. The work initially defines the problem and displays the state of the art, describing the main case histories. So, it explains the mathematical approaches suitable to simulate the interaction between soil and atmosphere. Then it describes the experimental equipment designed and built to study in sufficiently controlled conditions the interaction between soil and atmosphere and to derive the parameters required for the chosen coupled model. Finally, two approaches are proposed for the prediction of early warning systems. Both have been adopted for the interpretation of a well documented case history (Nocera Inferiore 2005)

Main courses attended during the three years:

Constitutive modeling by Prof. Miur Wood (English)

Shallow and deep foundations by Prof. Alessandro Mandolini

Plaxis code Introductory Course tenuto da Dr.Ing.Martino Leoni.

Institutional courses:

Slope stability by Prof.Urciuoli (English)

Numerical modeling by Prof.D'Acunto

During the three years, within an agreement between University of Naples "Federico II" and Autostrade Meridionali, he worked on development of early warning approaches and methods for the interpretation of precipitation effects on stability of slopes located upstream of the A3 Napoli-Salerno motorways;

He supported teaching activities for the course "Operation and Management of foundations and retaining works"

15/09/1999–21/03/2007

Civil Engineering Master Degree

5A

University of Naples "Federico II"
Piazzale Tecchio, 80, 80125 Napoli (Italy)

grade 110/110 with honours

Thesis title: "Modelling the infiltration processes produced by rainfall events in unsaturated soils"

Tutor: Prof.Ing. Luca Pagano

Degree Course covered three main competence areas:

- structural
(basis of the discipline, Eurocodes 2-3-4-8)
- hydraulic
(basis of the discipline, hydraulic constructions , urban drainage systems, water treatment systems)-
- geotechnical(basis of the discipline, in-situ and laboratory testing, retaining structures, constitutive modeling of the soil behavior)

15/09/1994–07/1999

'Liceo' specializing in classical studies

4A

Liceo "Antonio Genovesi"
Piazza del Gesù, 1, 80100 Napoli (Italy)

mark: 100/100 with full honours

classical disciplines:

Latin and greek language and literature

story and philosophy

italian literature

PERSONAL SKILLS

Mother tongue(s)

Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	C1	B2	B2	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills

excellent capacity for teamwork;
good ability to work under complex conditions

Organisational / managerial skills

excellent ability to organize the work:
keeping of deadlines
keeping of authority
ability to split the tasks with colleagues and employees

Job-related skills

excellent skills: FDM and FEM numerical modeling; programming and management of data acquisition systems; sensors for the determination of hydraulic and thermal balance between soil and atmosphere
good knowledge about: weighting systems using load cells

Digital skills

excellent:
Office suite, Geo-studio, Matlab, Comsol, R+, Autocad
good:Fortran 90Unix

Driving licence

B

ADDITIONAL INFORMATION

Publications

- G.Rianna, L.Comegna, L.Pagano, L.Picarelli, A.Redder The Role of Hydraulic Hysteresis on the Hydrological Response of Pyroclastic Silty Covers March 2019 Water 11(3):628

DOI: 10.3390/w11030628

- R. Padulano, A. Reder, G. Rianna. An ensemble approach for the analysis of extreme rainfall under climate change in Naples (Italy) March 2019 Hydrological Processes DOI: 10.1002/hyp.13449
- L. Pagano, A. Reder, G. Rianna "The effects of vegetation on the hydrological response of silty volcanic covers" Canadian Geotechnical Journal <https://doi.org/10.1139/cgj-2017-0625>
- Rianna G., Reder A., Pagano L. Estimating actual and potential bare soil evaporation from silty pyroclastic soils: Towards improved landslide prediction Volume 562, July 2018, Pages 193-209 <https://doi.org/10.1016/j.jhydrol.2018.05.005>
- Mercogliano P., Bucchignani E., Reder A., Rianna G. (2018) Climate Change. In: Bobrowsky P., Marker B. (eds) Encyclopedia of Engineering Geology. Encyclopedia of Earth Sciences Series. Springer, Cham DOI: <https://doi.org/10.1007/978-3-319-12127-7> Online ISBN: 978-3-319-12127-7
- Uzielli, M., Rianna, G., Ciervo, F., Mercogliano, P., and Eidsvig, U. K.: Temporal evolution of flow-like landslide hazard for a road infrastructure in the municipality of Nocera Inferiore (southern Italy) under the effect of climate change, Nat. Hazards Earth Syst. Sci., 18, 3019-3035, <https://doi.org/10.5194/nhess-18-3019-2018>, 2018.
- A. Reder, M. Iturbide, S. Herrera, G. Rianna, P. Mercogliano, J.M. Gutiérrez (2018). Assessing variations of extreme indices inducing weather-hazards on critical infrastructures over Europe—the INTACT framework. Climatic Change. DOI: 10.1007/s10584-018-2184-4
- A. Reder, G. Rianna, P. Mercogliano, S. Castellari (2018). Parametric investigation of Urban Heat Island dynamics through TEB 1D model for a case study: assessment of adaptation measures. Sustainable Cities and Society Volume 39, May 2018, Pages 662-673 <https://doi.org/10.1016/j.scs.2018.03.023>
- Reder, A., G. Rianna, and L. Pagano. 2018. "Physically Based Approaches Incorporating Evaporation for Early Warning Predictions of Rainfall-Induced Landslides." Natural Hazards and Earth System Sciences 18(2) doi.org/10.5194/nhess-18-613-2018.
- Gariano, S.L., G. Rianna, O. Petrucci, and F. Guzzetti. 2017. "Assessing Future Changes in the Occurrence of Rainfall-Induced Landslides at a Regional Scale." Science of the Total Environment 596–597 (2017) 417–426 doi.org/10.1016/j.scitotenv.2017.03.103
- Gariano, S.L., Petrucci O., Rianna G., Santini M., Guzzetti F. 2017. "Impacts of Past and Future Land Changes on Landslides in Southern Italy." Regional Environmental Change DOI 10.1007/s10113-017-1210-9
- Reder, A., Pagano, L., Picarelli, L., & Rianna, G. (2016). The role of the lowermost boundary conditions in the hydrological response of shallow sloping covers. Landslides. <http://doi.org/10.1007/s10346-016-0753-z>
- Reder A., Rianna G., Vezzoli R., Mercogliano P., Assessment of possible impacts of climate change on the hydrological regimes of different regions in China Advances in Climate Change Research doi:10.1016/j.accre.2016.09.002
- Rianna G., Comegna L., Mercogliano P., Picarelli L. Potential Effects of Climate Changes on soil-atmosphere interaction and landslide hazard; Natural Hazards (DOI :10.1007/s11069-016-2481-z)
- Ciervo, F., Rianna, G., Papa, M., Mercogliano, P. Effects of climate change on shallow-landslides in a small coastal catchment in Southern Italy; Landslides (DOI: 10.1007/s10346-016-0743-1)
- Reder A., Rianna G., Pagano L. Some aspects of water and energy budget of a pyroclastic cover accepted for publication in Environmental geotechnics <http://dx.doi.org/10.1680/jenge.15.00076>
- Comegna L., Rianna G., Su-Gon Lee, Picarelli, L. (2016) Influence of the wetting path on the mechanical response of shallow unsaturated sloping covers Computers and Geotechnics 73:164-169
- E. Bucchignani, P. Mercogliano, G. Rianna, H.- J. Panitz (2015): Analysis of ERA - Interim driven COSMO-CLM simulations over Middle East - North Africa domain at different spatial resolutions, *International Journal of Climatology*, 2015. DOI: 10.1002/joc.4559
- Rianna G., Iodice L., Fariello L., Guarino F., Mercogliano P. Stima del potenziale effetto dei Cambiamenti Climatici sui fenomeni di dissesto idro-geologici: il caso studio della Campania Centrale -Assessment about the potential effect of Climate Changes on geo-hydrological phenomena: Central Campania case study *Ingegneria dell'Ambiente* Vol. 3 n. 1/2016: 68-79
- Reder A., Rianna G. and Pagano L. (2014) - Prediction of suction evolution of silty pyroclastic covers in flume tests and field monitoring – *Procedia Earth and Planetary Science* vol 9, pp 214-221, DOI: 10.1016/j.proeps.2014.06.024

- Reder A., Rianna G. and Pagano L. (2014) - Calibration of TDRs and heat dissipation probes in pyroclastic soils - *Procedia Earth and Planetary Science* vol 9, pp 171-179, DOI:10.1016/j.proeps.2014.06.016
- Rianna G., Zollo A.L., Tommasi P., Paciucci M., Comegna L. and Mercogliano P. (2014) - Evaluation of the effects of climate changes on landslide activity of Orvieto clayey slope - *Procedia Earth and Planetary Science* vol 9, pp 54-63, DOI: 10.1016/j.proeps.2014.06.017
- Pagano L., Reder A. and Rianna G. (2014) - Experiments to investigate the hydrological behaviour of volcanic covers - *Procedia Earth and Planetary Science* vol 9, pp 14-22, DOI:10.1016/j.proeps.2014.06.013
- Rianna G., Pagano L. and Urcioli G. (2014) - Rainfall patterns triggering shallow flowslides in pyroclastic soils - *Engineering Geology* Volume 174:22-35 <http://dx.doi.org/10.1016/j.enggeo.2014.03.004>
- Rianna G., Pagano L., Urcioli G. (2014) - Investigation of soil-atmosphere interaction in pyroclastic soils - *Journal of Hydrology* Volume 510:480-492 <http://dx.doi.org/10.1016/j.jhydrol.2013.12.042>
- Boldini D., Comegna L., Rianna G., Tommasi P. (2014) - Evapotranspiration estimate in a clayey slope affected by landslide phenomena - *Rivista Italiana di Geotecnica, Special Issue on Slope-Atmosphere Interaction – Anno XLVIII – n.1*, pp.21-33
- Pagano L., Reder A., Rianna G. (2014) - Infiltration and evaporation processes in pyroclastic soils illustrated through the selection of representative events - *Rivista Italiana di Geotecnica, Special Issue on Slope- Atmosphere Interaction Anno XLVIII – n.1* pp.62-76
- Rianna G., Pagano L., Urcioli G. (2012). A Physical Model to Investigate the Influence of Atmospheric Variables on Soil Suction in Pyroclastic Soils. *Research and Applications* vol.2 pp 221-227
- Pagano L., Picarelli L., Rianna G., Urcioli G. (2010) - A simple numerical procedure for timely prediction of precipitation induced landslides in unsaturated pyroclastic soils - *Landslides* vol.7, pp. 273-289

Conference Proceedings

- Rianna G., Reder A., Villani V., Mercogliano P. (2017) Variations in landslide frequency due to climate changes through high resolution Euro-CORDEX Ensemble World Landslide Forum 4 M. Milkos et al. (eds.) *Advancing Culture of Living with Landslides* DOI 10.1007/978-3-319-53485_5_27
- Rianna G., Comegna L., Gariano S.L., Guzzetti F., Mercogliano P., Picarelli L., Tommasi P. (2017) Potential Effects of Climate Changes on Landslide Activity in Different Geomorphological Contexts *World Landslide Forum 4 M. Milkos et al. (eds.) Advancing Culture of Living with Landslides* DOI 10.1007/978-3-319-53485_5_27
- Rianna G., Guarino F., Mercogliano P., Cattaneo L., Vezzoli R., Iodice L. and Fariello L. (2014) - Variations in extreme values of precipitation for the next century in Central Campania - *Proceedings of SISC (Società Italiana per le Scienze del Clima) Second Annual Conference, Climate Change: Scenarios, impacts and policy; Venice, September 29-30, 2014* - pp 878-896 - ISBN 978 – 88 – 97666 – 04 – 2
- Zollo A.L., Rianna G., Mercogliano P., Tommasi P. and Comegna L. (2014) - Validation of a Simulation Chain to Assess Climate Change Impact on Precipitation Induced – *Landslide Science for a Safer Geoenvironment* pp 287-292 - *Proceedings of World Landslide Forum 3, 2-6 June 2014, Beijing*. vol 1. pp 287-292. Print ISBN 978-3-319-04998-4 Online ISBN 978-3-319-04999-1 DOI 10.1007/978-3-319-04999-1_39
- Rianna G., Tommasi P., Comegna L. and Mercogliano P. - Preliminary assessment of the effects of climate change on landslide activity of Orvieto clayey slope - *Proceedings of SISC (Società Italiana di Scienze del Clima) First Annual Conference; Lecce, 23-24 settembre 2013* ,507-522 ISBN: 978-88-97666-08-0
- Montesarchio M., Mercogliano P., Rianna G., Michetti M., Santina M. (2013) Influence of changes in land cover on climate in the southern Italy 13th EMS Annual Meeting and 10th European Conference on Applied Climatology (ECAC) 8-10 September 2013 Reading (UK).
- Rianna G., Pagano L., Mercogliano P., Montesarchio M. (2012) Measurements, interpretation and climate change effects evaluation for pyroclastic bare soil evaporation, Abstract B23E-0498 presented at 2012 Fall Meeting, AGU, San Francisco, Calif., 3-7 December
- Rianna G., Pagano L., Urcioli G. (2012). Influenza dei processi evaporativi e della storia delle precipitazioni sul comportamento idraulico di terreni piroclastici (Influence of evaporative processes and the history of rainfall on the hydraulic behavior of pyroclastic soils). *Incontro Annuale dei Ricercatori di Geotecnica (Padova 2-4 Luglio 2012)*

- Rianna G., Pagano L. (2011) - Un modello fisico prototipale per la caratterizzazione sperimentale dell'interazione suolo-atmosfera in terreni piroclastici (italian with an extended abstract in english) A prototypal physical model for the experimental characterization of the interaction between soil and atmosphere in pyroclastic soils - Atti del XXIV CONVEGNO NAZIONALE DI GEOTECNICA: INNOVAZIONE TECNOLOGICA NELL'INGEGNERIA GEOTECNICA Napoli, 22-24 giugno 2011 (volume 2) Edizioni AGI pp775-782
- Rianna G., Pagano L. (2009) - "Sull'importanza di una corretta modellazione dell'interazione suolo-atmosfera nello studio dei fenomeni di colata" (italian) - "About a proper modeling of the interaction between soil and atmosphere to study the debris flow phenomena" - Annual Meeting of Geotechnical Researchers (Roma 9-11 settembre, 2009)
- Pagano L., Rianna G., Zingariello M.C., Urciuoli G., Vinale F. (2008) - An early warning system to predict flowslides in pyroclastic deposits - Proceedings of the 10th International Symposium on Landslides and Engineered Slopes, 30 June - 4 July 2008, Xi'an, China 2008 Taylor & Francis Group, London

Book Chapters

- Pagano L., Rianna G., Zingariello M.C., Urciuoli G. (2011) - Un sistema di allarme preventivo per la previsione di fenomeni di colata in terreni piroclastici -pp 85-91 in Book:Stabilità dei pendii parzialmente saturi - Sperimentazione in laboratorio e in sito modellazione - Editor: Urciuoli G. ISBN 978-88-86977-72-2

Research Papers

- Mercogliano P., Montesarchio M., Rianna G., Vezzoli R., Zollo A.L., Schiano P. (2014) - RP0233 – High resolution climate scenarios on Mediterranean test case areas for the hydro-climate integrated system - CMCC Research Paper
- Rianna G., Vezzoli R., Zollo N.C., Mercogliano P. (2014) – RP0230- Performance evaluation of integrated system to model the climate change impacts on hydrogeological hazard – CMCC Research Paper
- Turco M., Zollo A.L., Rianna G., Cattaneo L., Vezzoli R., Mercogliano P. (2013) - RP0171 - Post-processing methods for COSMO-CLM precipitation over Italy - CMCC Research Paper
- Zollo A.L., Mercogliano P., Turco M., Vezzoli R., Rianna G., Manzi M.P. and Montesarchio M. (2012) - RP0129 - Architectures and Tools to Analyse the Impact of Climate Change on Hydrogeological Risk on Mediterranean Area - CMCC Research Paper
- Rianna G. (2008) - RP0033 – Terra-LM sensitivity tests: Falkenberg 2006 - CMCC Research Paper
- Rianna G. (2008) - RP0032 – Terra-LM sensitivity tests: Falkenberg 2005 - CMCC Research Paper
- Rianna G. (2007) - RP0026 – Installazione della versione “stand alone” del soil module TERRA-LM - CMCC Research Paper
- Rianna G. (2007) - RP0024 – Modellazione dei processi di filtrazione nel suolo tramite codici di calcolo - CMCC Research Paper
- Rianna G. (2007) - RP0022 – Studio e valutazione dei possibili miglioramenti apportabili a Terra-LM tramite il confronto con altri modelli SVAT - CMCC Research Paper
- Rianna G. (2007) - RP0020 – Descrizione del modulo TERRA_LM (per la valutazione di temperatura e contenuto d'acqua nel sottosuolo) del modello meteorologico COSMO_LM - CMCC Research Paper