CURRICULUM VITAE

Antonio Coppola
2016

PERSONAL INFORMATION

Name	**Coppola Antonio**
Address	
Telephone	
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E-mail	
website	
Nationality	Italian
Date of birth [Day, month, year]	
Place of birth	

WORK EXPERIENCE

• Dates (from – to)	**2000 - NOW** University of Basilicata Agricultural and Forestry Hydrology and Hydraulics Full Professor Professor of Agricultural and Forestry Watershed Hydrology
• Dates (from – to)	**1999-2000** University of Napoli Federico II Project FLUMENDOSA (Effects of Wastewater Reuse for Irrigation on Soil Properties – Sardinia Region) Research Contract Hydrology and Irrigation with non-conventional water resources
• Dates (from – to)	**1996-1999** University of Napoli Federico II Project MEDALUS (Mediterranean desertification and land use) Research Contract Hydrology and desertification researches

EDUCATION AND TRAINING

• Dates (from – to)

1992

Agricultural Faculty – University of Napoli

Degree in Agricultural Sciences and Technologies

PERSONAL SKILLS AND COMPETENCES

MOTHER TONGUE

Italian

OTHER LANGUAGES

[Specify language]

	English	French
• Reading skills	good	good
• Writing skills	good	good
• Verbal skills	good	basic

TECHNICAL AND ORGANIZATIONAL SKILLS AND COMPETENCES

1. COORDINATION AND/OR PARTICIPATION IN NATIONAL AND INTERNATIONAL PROJECTS:

- University and Research Ministry National Projects (PRIN) 2002 (Heavy metals transport in soils irrigated with urban wastewater: Experiments and modeling at the mesoscale);
- PRIN 2004 (Modeling agricultural pollutants dynamics at plot scale)
- PRIN 2007 (Fate of pesticides in soils at field scale)
- PRIN 2012 (Monitoring and modelling of organic and inorganic contaminants transport in the soil-bedrock system);
- National Research Council (CNR) project; Remotely sensed surface soil water content in the project by aircraft transported active sensors;
- Project UNIBAS-CNR-Cold and Arid Regions Environmental and Engineering Research Institute -Chinese Academy of Sciences (CAREERI/CAS). "Irrigation using saline water: contribution to increase productivity and yield quality of traditional crops in Chinese N.W. oasis" (Minquin basin):

  Main objectives in the project:

  – Experimental quantification of groundwater recharge in the Minquin basin;

  – Numerical modelling of groundwater recharge in the Minquin basin.
- 2010 - CIHEAM/IAM Bari and "Cooperazione Italiana", Italian Government Project "Rational use of natural resources to improve agricultural productions in Syria"

  Main objectives in the project:

  - Water balance in Northern Syria;
  - Controlling salt balance in Northern Syria (Euphrates River Region)
- 2015 – CIHEAM/IAM Bari and "Cooperazione Italiana", Italian Government Project "Matrouh Rural Sustainable Development Project (MARSADEV)" – Marsa Matrouh -Egypt;
- 2016 - ARIMnet2 bando internazionale 2014: Salinization in irrigated areas: risk evaluation and prev ention - SALTFREE.

2. ASSOCIATE MEMBER OF THE ITALIAN NATIONAL COUNCIL OF RESEARCHES– INSTITUTE FOR THE MEDITERRANEAN AGRICLTURAL AND FORESTRY SYSTEMS FOR THE BILATERLAL PROJECT CNR-ISAFOM-COLD AND ARID REGIONS ENVIRONMENTAL AND ENGINEERING RESEARCH INSTITUTE -CHINESE ACADEMY OF SCIENCES (CAREERI/CAS), PROJECT "IRRIGATION USING SALINE WATER: CONTRIBUTION TO INCREASE PRODUCTIVITY AND YIELD QUALITY OF TRADITIONAL CROPS IN CHINESE N.W. OASIS".

3. MEMBER OF THE SCIENTIFIC COMMITTEE OF THE HYDROLOGICAL SCIENCES AND OF THE SOIL SYSTEM SCIENCES OF THE EUROPEAN GEOSCIENCES UNION (EGU):

- 2013-2015: Chair of the Soil Physics Division of the EGU
- 2007-2010: Convener of the session "Transport in preferential flow domains of the soil porous system: Measuring, interpretation, models, upscaling (for the Soil System Sciences group);
- 2007-2010: convener of the session "Unsaturated zone flow and transport processes: from science to soil and water management (for the Hydrological Sciences Group);
- 2014 -2016: convener of the session ""Dynamic soil properties for understanding flow and transport in the landscape".
- 2014: convener of the session "On the physical basis to understand the dynamics of soil hydraulic properties"

4. ASSOCIATE EDITOR OF THE ECOHYDROLOGY JOURNAL, WILEY ONLINE LIBRARY

5. SCIENTIFIC RESPONSIBLE OF THE HYDRAULICS LABORATORY AT THE AGRICULTURAL FACULTY OF THE UNIVERSITY OF BASILICATA

5. OTHER:

- Scientific equipments of the Soil and Contaminant Hydrology Laboratory at the Agricultural Faculty of the University of Basilicata
- Numerical Models (Fortran, Matlab)

DRIVING LICENCE(S)

Driving licence "B" (Motorbike, Car, little lorries)

MAIN RESEARCH ACTIVITIES

Current research focuses on measuring and modeling water and solute transport in unsaturated heterogeneous and layered porous media. Specific topics include:

- Soil Hydrological characterization;
- Spatial variability of soil hydrological properties and stochastic approaches in natural porous media;
- Conceptualization, modelling and prediction of preferential flow velocity, pathways and patterns on forest and agricultural hillslopes;
- Numerical modelling of soil water and solute transport in the Soil-Plant-Atmosphere continuum system;
- Irrigation in arid conditions and with non-conventional water resources;
- Mapping groundwater pollution risk within agricultural watershed using modelling, geostatistics and GIS;
- Groundwater resources estimates in arid zones;
- Remote sensing of soil salinity;
- Forest hillslope hydrology.

LIST OF MAIN PUBLICATIONS

1. Coppola A., K. Smettem, A. Ajeel, A. Saeed, G. Dragonetti, A. Comegna, N. Lamaddalena, A. Vacca, 2016. Calibration of an EMI sensor with TDR data to monitor root zone electrical conductivity under saline water irrigation. European Journal of Soil Science, 67, 737–748. doi: 10.1111/ejss.12390
2. Comegna A., Coppola A., Dragonetti G., Sommella A., 2016. Estimating Nonaqueous-Phase Liquid Content in Variably Saturated Soils Using Time Domain Reflectometry. Vadose Zone J., vol. 15, ISSN: 1539-1663, doi: 10.2136/vzj2015.11.0145
3. Coppola A., Comegna A., Dragonetti G., de Simone L., 2015. Evaluating the role of soil variability on potential groundwater pollution and recharge in a Mediterranean agricultural watershed. In The Sustainability of Agro-

Food and Natural Resource Systems in the Mediterranean Basin. Springer, doi: 10.1007/978-3-319-16357-4

4. Coppola A., A. Comegna, G. Dragonetti, H. H. Gerke, A. Basile, 2015. Simulated Preferential Water Flow and Solute Transport in Shrinking Soils. Vadose Zone J. doi:10.2136/vzj2015.02.0021
5. Coppola A., N. Chaali, G. Dragonetti, N. Lamaddalena and A. Comegna, 2015. Root uptake under non-uniform root-zone salinity. Ecohydrol. (2014). Wiley. DOI: 10.1002/eco.1594
6. Coppola, G. Dragonetti, A. Comegna, P. Zdruli, N. Lamaddalena, S. Pace and L. De Simone, 2014. Mapping solute deep percolation fluxes at regional scale by integrating a process-based vadose zone model in a Monte Carlo approach, Soil Science and Plant Nutrition, DOI: 10.1080/00380768.2013.855615N.
7. Comegna, A. Coppola, G. Dragonetti, G. Severino, A. Sommella, A. Basile, 2013. Dielectric properties of a tilled sandy volcanic-vesuvian soil with moderate andic features. Soil & Tillage Research 133 (2013) 93–100
8. X. Wang, G. Quan, Y. Pan, R. H.,Y. Zhang, A. Tedeschi, A. Basile, A. Comegna, A. Coppola, R. de Mascellis, 2013. Comparison of hydraulic behaviour of unvegetated and vegetation-stabilized sand dunes in arid desert ecosystems. ECOHYDROLOGY (ISSN:1936-0584). n/a- n/a. 1936- 0584;
9. Coppola, G. Dragonetti, A. Comegna, N. Lamaddalena, B. Caush, M.A. Haikal, A. Basile, 2013. Measuring and modeling water content in stony soils. Soil & Tillage Research 128 (2013), 9-22
10. Chaali, A. Comegna, G. Dragonetti, M. Todorovic, R. Albrizio, N. Lamaddalena, A. Coppola, 2013. Monitoring and modeling root-uptake salinity reduction factors of a tomato crop under non-uniform soil salinity distribution. Procedia Environmental Sciences. vol. 19, p. 643-653;
11. A. Comegna, A. Coppola, G. Dragonetti, A. Sommella (2013). Dielectric Response of a Variable Saturated Soil Contaminated by Non-Aqueous Phase Liquids (NAPLs). In: Procedia Environmental Sciences. vol. 19, p. 701-710;
12. Coppola, A. Comegna, G. Dragonetti, L. De Simone, N. Lamaddalena, P. Zdruli, A. Basile, 2013. A stochastic texture-based approach for evaluating solute travel times to groundwater at regional scale by coupling GIS and transfer function. Procedia Environmental Sciences. vol. 19, p. 711-722;
13. A. Comegna, A. Coppola, V. Comegna, A. Sommella, C.D. Vitale (2013). Use of a Fractional Brownian Motion Model to Mimic Spatial Horizontal Variation of Soil Physical and Hydraulic Properties Displaying a Power-law Variogram. In: Procedia Environmental Sciences. vol. 19, p. 416-425
14. Coppola, H. H. Gerke, A. Comegna, A. Basile, V. Comegna, 2012. Dual-permeability model for flow in shrinking soil with dominant horizontal deformation. Water Resources Research, Vol. 48, W08527, doi:10.1029/2011WR011376.
15. Terribile F., A. Coppola, G. Langella, M. Martina, and A. Basile, 2011. Potential and limitations of using soil mapping information to understand landscape hydrology. Hydrol. Earth Syst. Sci., 15, 3895-3933, 2011. doi:10.5194/hess-15-3895-2011
16. Severino G. , Coppola A., 2011. A Note on the Apparent Conductivity of Stratified Porous Media in Unsaturated Steady Flow Above a Water Table. Transport in Porous Media. DOI 10.1007/s11242-011-9870-2
17. Comegna V., Coppola A., Basile A., Comegna A., 2012. Review of Approaches for Measuring Soil Hydraulic Properties and Assessing the Impacts of Spatial Dependence on the Results. In: G. A. Kazemi. Hydrogeology a Global Perspective. InTech, ISBN: 9789535100485
18. Coppola, A., Basile A., Wang X., Comegna V., Tedeschi A., Mele A., Comegna A., 2011. Hydrological behaviour of microbiotic crusts on sand dunes: Example from NW China comparing infiltration in crusted and crust-removed soil. Soil and Tillage Research, doi:10.1016/j.still.2011.08.003
19. Coppola A., Comegna A. Dragonetti G., Lamaddalena N., Kader A. M., and Comegna V., 2011. Average moisture saturation effects on temporal stability of soil water spatial distribution at field scale. Soil & Tillage Research, 114 (2011) 155–164. doi:10.1016/j.still.2011.04.009
20. Coppola A., Comegna A. Dragonetti G., Dyck M., Basile A., Lamaddalena N., Kassab M. and Comegna V., 2011. Solute transport scales in an unsaturated stony soil. Advances in Water Resources. Volume 34, Issue 6, June 2011, Pages 747-759. doi:10.1016/j.advwatres.2011.03.006 9.
21. Comegna V., Coppola A., Comegna A., (2011). Laboratory-scale study on reactive contaminant transport in soil by means of one-dimensional advective dispersive models. J. of Agricultural Engineering, vol. 2, p. 35-40, ISSN: 1974-7071
22. Severino G, Comegna A., Coppola A., Sommella A., Santini A., 2010. Stochastic analysis of a field-scale

unsaturated transport experiment, Advances in Water Resources, doi:10.1016/j.advwatres.2010.09.004

23. Comegna A., Coppola A., Comegna V., Severino G., Sommella A., Vitale C., 2010. State-space approach to evaluate spatial variability of field measured soil water status along a line transect in a volcanic-vesuvian soil. Hydrol. Earth Syst. Sci., 14, 2455–2463, 2010. doi:10.5194/hess-14-2455-2010
24. Coppola A., Basile A., Bonfante A., Comegna A., Lamadalena N., Manna P., 2009. Effective hydraulic properties and evolution of soil water content profles in aggregated soils . Atti del IX convegno AIIA. Ischia, 12-16 settembre.
25. Coppola A., Comegna V., 2009. Interpretazione mediante modelli CD di fenomeni di trasporto di metalli pesanti nel suolo. Atti del IX convegno AIIA. Ischia, 12-16 settembre.
26. Comegna A., Coppola A., Severino G., Sommella A., 2009. Analisi autoregressiva e spettrale della struttura dello stato idrico del suolo. Atti del IX convegno AIIA. Ischia, 12-16 settembre.
27. Coppola A., Kutilek, M., Frind E. O., 2009. Transport in preferential flow domains of the soil porous system: Measurement, interpretation, modelling, and upscaling, J. Contam. Hydrol. (2008), doi:10.1016/j.jconhyd.2008.05.011.
28. Coppola, A., Basile A., Comegna A., Lamaddalena N., 2009. Monte Carlo analysis of field water flow comparing uni- and bimodal effective hydraulic parameters for structured soil, Journal of Contaminant Hydrology (2008), doi:10.1016/j.jconhyd.2008.09.007.
29. Coppola, A., Comegna V., Basile A., Lamaddalena N., Severino G., 2009. Darcian preferential water flow and solute transport through bimodal porous systems: Experiments and modelling, J. Contam. Hydrol. (2008) - doi:10.1016/j.jconhyd.2008.10.004.
30. Ciollaro G., Comegna A., Coppola A., Kassab H., Hassan S., Lamaddalena N., 2008. Spatial variability of solute tran sport mechanism based on generalized transfer function model. Option Méditerranéennes 84:317-329
31. Severino, G., Cvetkovic, V., Coppola, A., 2007, Spatial Moments for Colloid-Enhanced Radionuclide Transport in Heterogeneous Aquifers. Advances in Water Resources doi:10.1016/j.advwatres.2006.03.001
32. Coppola A. et al., 2007. Spatial distribution and structure of remotely sensed surface water content estimated by a thermal inertia approach. Remote Sensing for Environmental Monitoring and Change Detection (Proceedings of Symposium HS3007 at IUGG2007, Perugia, July 2007). IAHS Publ. 316, 2007.
33. Coppola A. 2007. Comments on ''Application and Evaluation of the SWAP Model for Simulating Water and Solute Transport in a Cracking Clay Soil''. Soil. Sci. Soc. Am. J.
34. Basile A., Coppola A., De Mascellis R., Randazzo L., 2006. A hysteresis based scaling approach to deduce field hydraulic behaviour from core scale measurements. Vadose Zone Journal, 5:1005–1016 (2006), doi:10.2136/vzj2005.0128
35. Severino, G., Cvetkovic, V., Coppola, A., 2006, On The Velocity Covariance for Steady Flows in Heterogeneous Porous Formations and Its Applications To Contaminants Transport, Computational Geosciences (2005) 9:155–177-DOI: 10.1007/s10596-005-9005-3
36. Comegna,A., Coppola, A., Sommella, A., Severino, G., (2006), Spatial structure analysis of field measurement soil water status along a line transect in a sandy soil. In: Metodi Statistici e Matematici per l'Analisi delle Serie Idrologiche. Roma, pp. 39-48, ISBN: 88-88885-05-6.
37. Comegna, A., Coppola, A., Sommella, A., Severino, G., (2006), Local-scale solute transport in variously structured soils under continuous flood irrigation. In: Sustainable Irrigation Management Technologies and Policies, (Eds. G. Lorenzini, C.A. Brebbia), Witpress, pp. 85-100, ISBN: 1-84564-043-8.
38. Basile A, Coppola A, De Mascellis R, Mele G, Terribile F., 2006. A comparative analysis of the pore system in COST 622 volcanic soils by means of water retention measurements and image analysis. In SOILS OF VOLCANIC REGIONS OF EUROPE. SPRINGER-VERLAG
39. Bartoli F., Regalado C., Basile A., Buurman P, Coppola A, 2006. Physical properties in european volcanic soils: A synthesis and recent developments. In SOILS OF VOLCANIC REGIONS OF EUROPE. SPRINGER-VERLAG
40. Coppola A., Di Giacomo E., Palladino M., Romano N., 2005. A bimodal ARYA&PARIS approach for upscaling the hydrological properties of a structured soil. VIII Convegno Nazionale di Ingegneria Agraria. Catania 27-30 giugno 2005.
41. Comegna V., Coppola A., Severino G., Sommella A., 2005. Trasporto di soluto inerte alla scala parcellare in relazione a differenti modalità di somministrazione. VIII Convegno Nazionale di Ingegneria Agraria. Catania

27-30 giugno 2005.

42. Damiani P., Ciollaro G., Coppola A., 2005. Influenza della stratificazione indotta dalle lavorazioni sul comportamento idrologico di un suolo strutturato. VIII Convegno Nazionale di Ingegneria Agraria. Catania 27-30 giugno 2005.
43. Basile A., Coppola A., 2005. A hysteresis based scaling approach to deduce field hydraulic behaviour from core scale measurements. VIII Convegno Nazionale di Ingegneria Agraria. Catania 27-30 giugno 2005.
44. Leij F. J., Romano N., Palladino M., Schaap M.G., Coppola A., 2004. Topographical attributes to predict soil hydraulic properties along a hillslope transect. Water Resour. Res., 40, W02407, doi:10.1029/2002WR001641.
45. Coppola A., Santini A., Botti P., Vacca S., Comegna V., Severino G., 2004.. Methodological approach to evaluating the response of soil hydrological behavior to irrigation with treated municipal wastewater. Journal of Hydrology 292 (2004) 114–134.
46. Santini A., Coppola A., 2004. Comportamento idrologico dei suoli irrigati con acque reflue urbane. Rivista L'Acqua.
47. Coppola A., Comegna A., Santini A., Severino G., 2004. Aspetti teorici e sperimentali del trasporto di soluti in suoli stratificati. Trento, 7-10 settembre 2004. XXIX Convegno di Idraulica e Costruzioni Idrauliche.
48. Coppola A., Santini A., Botti P., Vacca S., 2003. Urban wastewater effects on water flow and solute transport in soils. Journal of Environmental Science and Health. Part A-Toxic/Hazardous Substances and Environmental Engineering Vol.A 38, 8: 1479-1488.
49. Basile A., Ciollaro G., Coppola A., 2003. Hysteresis in soil-water characteristics as a key to interpreting comparisons of laboratory and field measured hydraulic properties. Water Resour. Res., 39(12), 1355, doi:10.1029/2003WR002432.
50. Comegna A., Coppola A., Sommella A., Vitale C., 2003. Scale dependence of local water fluxes and solute transport in a field soil. In Metodi Statistici e Matematici per l'Analisi delle Serie Idrologiche. Pubblicazione n. 2812 CNR-GNDCI. Roma, maggio 2003.
51. Comegna V., Coppola A., Severino G., 2002. Trasporto di soluto inerte in suolo drenato in assenza di evaporazione. Potenza, 16-19 settembre 2002. XXVIII Convegno di Idraulica e Costruzioni Idrauliche.
52. Coppola A., Palladino M., 2002. Transport properties in soils related to local-scale heterogeneities: Theoretical considerations and applications. In "Sustainable Land Management-Environmental Protection. A Soil Physical Approach. ADVANCES IN GEOECOLOGY 35, CATENA VERLAG, pp. 199-210
53. Coppola A., Castiglione P., 2002. Impiego della riflettometria nel dominio del tempo (TDR) per la misura del contenuto d'acqua e della conducibilità elettrica nei mezzi porosi. Idronomia Montana, n 21.
54. Ciollaro G., Coppola A., Damiani P, Sommella A., 2002. Rilievo di grandezze idro-meteorologiche per la stesura di un bilancio idrico alla scala parcellare. Idronomia Montana, n. 21.
55. Coppola A., Santini A., Botti P., Vacca S., Puddu R., 2002. Monitoraggio dei processi di trasporto dell'acqua e dei soluti in suoli stratificati. Idronomia Montana, n. 21.
56. Coppola A. et al., 2002. Monitoraggio delle proprietà idrauliche dei suoli irrigati con acque reflue urbane. Bollettino della Società Italiana di Scienza del Suolo. Vol. 51, 541.
57. Comegna V., Coppola A., e Sommella A., 2001. "Effectiveness of equilibrium and physical non-equilibrium approaches for interpreting solute transport through variously structured soils". Journal of Contaminant Hydrology, 50:121-138.
58. Coppola A, 2000. Unimodal and Bimodal Descriptions of Hydraulic Properties for Aggregated Soils. Soil Science Society of America Journal. 64:1252-1262.
59. Comegna V., Coppola A., e Sommella A., 2000. Interpreting local-scale solute transport in variously structured soil materials: experimental methodologies and modeling approaches. International Conference on "New trends in water and environmental engineering for safety and life: Eco-compatible solutions for aquatic environments". Capri, 3-7 luglio 2000.
60. Comegna V., Coppola A., Sommella A., 1999. Nonreactive solute transport in variously structured soil materials as determined by laboratory-based time domain reflectometry (TDR), Geoderma, 92: 167-184.
61. Comegna V., Coppola A., Sommella A., 1999. "Studio del trasporto anionico nel suolo mediante l'impiego di modelli interpretativi CD e MIM monodimensionali. Riv di Irr. e Dren., 45, 4, 7-16.

62. Santini A., A. Coppola, N. Romano, F. Terribile, 1999. Interpretation of spatial variability of soil hydraulic properties using land system analysis. In "Modelling of transport processes in soils at various scales in time and space". Ed. Feyen and Wiyo Leuven-Belgio, pp. 491-500.

63. Comegna V., Coppola A., e Sommella A., 1999. Analysis of solute transport parameters in miscible displacement through undisturbed soil columns. In "Modelling of transport processes in soils at various scales in time and space". Ed. Feyen and Wiyo Leuven-Belgio, pp. 225-239.

64. Santini A., Sommella A., Romano N., D'Anna F. and Coppola A., 1999. Application of the MEDRUSH model to the Agri. Mediterranean Desertification and Land Use (MEDALUS III – Core Progetto) final report, 1996-1999.

65. Basile A., Coppola A., D'Urso G., 1998. Methodological approach for soil hydrological classifications. Atti I Inter-Regional Conference on "Innovative issue in irrigation and drainage", ICID, Lisbona, 16-18 settembre 1998.

66. Coppola A., 1998. Stima delle proprietà idrauliche in suoli a porosità bimodale. Riv di Irr. e Dren., 45, 4, 7-16.

67. Coppola A., Greco R., 1997. Preferential flow through swelling and shrinking clay soil columns. In Proceedings of the International conference on Water management, salinity and pollution control towards sustainable irrigation in the mediterranean region. 22-26 settembre 1997. Istituto Agronomico Mediterraneo. Valenzano (Bari). Italia.

68. Comegna V., Coppola A., Sommella A., 1997. Determinazione dei parametri del trasporto chimico in mezzo poroso saturo mediante la tecnica TDR. In Atti del VI Convegno Nazionale di Ingegneria Agraria. Ancona, Italia.

69. Coppola A., Damiani P., 1997. "Metodi non distruttivi per la misura in pieno campo del contenuto d'acqua del suolo". In Atti del VI Convegno Nazionale di Ingegneria Agraria. Ancona, Italia.

70. Greco R., Coppola A., 1997. "Modellazione dei processi di infiltrazione in colonne di suolo rigonfiante". In Atti del XXVI Convegno Nazionale di Idraulica e Costruzioni Idrauliche. Catania, Italia.

71. Santini A., Romano N., Coppola A., 1996. Analisi geostatistica della variabilità spaziale di un versante del bacino del fiume Agri. " Scritti dedicati a Giovanni Tournon" SIREA, Torino. 281-293.

72. D'Urso G., Coppola A., Santini A., 1995. Spatial and temporal variability of soil dielectric patterns on the Sele test site. In Proceedings of the second workshop on Hydrological and Microwave Scattering Modelling for Spatial and Temporal Soil Moisture Mapping from ERS-1 and JERS-1 SAR Data and Macroscale Hydrologic Modelling. Held at INRA, Rennes Cédex, France.

Antonio Coppola