

**SHORT CURRICULUM VITAE**  
**ANGELO BASILE**

**POSITION:**

Researcher

**CURRENT ADDRESS:**

National Research Council (CNR)  
Department of Biology, Agriculture and Food Sciences (DISBA)  
Institute for Mediterranean Agricultural and Forest systems (ISAFOM)  
Via Patacca 85; 80056 Ercolano (Naples) - Italy  
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**SKILLS AND RESEARCH INTERESTS:**

- Soil hydrology and hydropedology;
- Measurement and parameterization of hydraulic properties;
- Distribution of soil pores-size in relation to hydraulic properties;
- Fate of solutes;
- Irrigation;
- Soil heterogeneity and hydrological processes;
- Application of geophysical techniques for measuring the soil salinity;
- Modelling of water and solute transport in heterogeneous unsaturated porous media;
- Modelling of crop growth and yield;
- Laboratory-field data up-scaling procedures;
- Analysis of the terroir and relations between food quality and soil;
- Effects of climate change on the agro-environment;
- Web application of Geospatial Decision Support Systems (WS-DSS).

**MAIN PROFESSIONAL EXPERIENCES AND ACTIVITIES:**

since 1996 - Scientific head of the CNR Laboratory: "Soil physics and hydrology of porous media".

from 2016 - Member of the ISAFOM Institute Council.

from 2016 - Member of the board of the CRISP - Interdepartmental Research Center on the Earth Critical Zone to support Landscape Management.

2009 - 2014 - President of the Soil Physics Commission of the Italian Society of Soil Sciences (SISS).

2009 - 2014 Member of the Board of the Italian Society of Soil Sciences (SISS)

**RECENT NATIONAL AND INTERNATIONAL RESEARCH PROJECTS:**

Over the past 10 years, he was coordinator of

- "New methodology to identify nitrate vulnerability areas", funded by Regione Campania, Regione Lombardy and Regione Calabria, (budget 500 000 €), Scientific head.
- "Hydrological characterization of the Azienda Improsta soils", funded by Campania Region (32 000 €), Scientific head.
- "The role of soils in the floods prevision" funded by MIUR (96 000 €), head of research unit.

- "ZOVisA: Vineyard/wine zoning at farm scale" funded by PSR L124 Regione Campania, (140 000 €), head of research unit.
- "QUARC: Quality of local products in relation to the territory: innovative and integrated approaches to strengthen the competitiveness of the Agribusiness funded by ERDF 2007-2013 (370 000 €), Scientific Coordinator.
- "SOILCONSWEB: Multifunctional soil conservation and land management through the development of a web-based spatial decision support system" funded by EU-LIFE + environment, (600 000 €), Head of research unit.
- "SALTFREE: Salinization in irrigated areas: risk evaluation and prevention" funded by EU-Arimnet2 project through MIPAF (90 000 €), Head of Research unit.
- "LANDSUPPORT: Development of Integrated Web-Based Land Decision Support System Aiming Towards the Implementation of Policies for Agriculture and Environment" financed by the H2020 project (700 000 €), Head of Research unit.

### **PUBLICATIONS:**

The research activity is presented mainly in peer-reviewed high IF journals (40), HI=17. In the following the published papers of the last ten years:

Bonfante, A., Monaco, E., Manna, P., De Mascellis, R., **Basile, A.**, Buonanno, M., ... & Belfiore, O. (2019). LCIS DSS—An irrigation supporting system for water use efficiency improvement in precision agriculture: A maize case study. *Agricultural Systems*, 176, 102646.

Alfieri, S. M., Riccardi, M., Menenti, M., **Basile, A.**, Bonfante, A., & De Lorenzi, F. (2019).

Adaptability of global olive cultivars to water availability under future Mediterranean climate. *Mitigation and adaptation strategies for global change*, 24(3), 435-466.

Coppola, A., Dragonetti, G., Sengouga, A., Lamaddalena, N., Comegna, A., **Basile, A.**, ... & Nardella, L. (2019). Identifying Optimal Irrigation Water Needs at District Scale by Using a Physically Based Agro-Hydrological Model. *Water*, 11(4), 841.

**Basile, A.**, Bonfante, A., Coppola, A., De Mascellis, R., Falanga Bolognesi, S., Terribile, F., & Manna, P. (2019). How does PTF Interpret Soil Heterogeneity? A Stochastic Approach Applied to a Case Study on Maize in Northern Italy. *Water*, 11(2), 275.

Terribile, F., Iamarino, M., Langella, G., Manna, P., Antonio Miletì, F., Vingiani, S. and **Basile, A.**: The hidden ecological resource of andic soils in mountain ecosystems: Evidence from Italy, *Solid Earth*, 9(1), doi:10.5194/se-9-63-2018, 2018.

Bonfante, A., Sellami, M. H., Abi Saab, M. T., Albrizio, R., **Basile, A.**, Fahed, S., Giorio, P., Langella, G., Monaco, E. and Bouma, J.: The role of soils in the analysis of potential agricultural production: A case study in Lebanon, *Agric. Syst.*, 156, doi:10.1016/j.agry.2017.05.018, 2017.

Terribile, F., Bonfante, A., D'Antonio, A., De Mascellis, R., De Michele, C., Langella, G., Manna, P., Miletì, F. A., Vingiani, S. and **Basile, A.**: A geospatial decision support system for supporting quality viticulture at the landscape scale, *Comput. Electron. Agric.*, 140, doi:10.1016/j.compag.2017.05.028, 2017.

De Lorenzi, F., Alfieri, S. M., Monaco, E., Bonfante, A., **Basile, A.**, Patanè, C. and Menenti, M.: Adaptability to future climate of irrigated crops: The interplay of water management and cultivars responses. A case study on tomato, *Biosyst. Eng.*, 157, doi:10.1016/j.biosystemseng.2017.02.007, 2017.

Bonfante A.; Alfieri, S. M. **Basile A.**, et al.: Evaluation of the effects of future climate change on grape quality through a physically based model application: a case study for the Aglianico grapevine in Campania region, Italy, *Agric. Syst.*, 152, 100–109, doi:10.1016/j.agry.2016.12.009, 2017.

Langella, G., **Basile, A.**, Bonfante, A., Mileti, F. A., Terribile, F.: Spatial analysis of clay content in soils using neurocomputing and pedological support: a case study of Valle Telesina (South Italy), *Environ. earth Sci.*, 75, 1–19, doi:10.1007/s12665-016-6163-7, 2016.

Bonfante, A., Agrillo, A., Albrizio, R., **Basile, A.**, Buonomo, R., De Mascellis, R., Gambuti, A., Giorio, P., Guida, G., Langella, G., Manna, P., Minieri, L., Moio, L., Siani, T. and Terribile, F.: Functional homogeneous zones (fHZs) in viticultural zoning procedure: an Italian case study on Aglianico vine, *Soil*, 1(1), 427–441, doi:10.5194/soil-1-427-2015, 2015. Terribile, F., Agrillo, A., Bonfante, A., Buscemi, G., Colandrea, M., D’Antonio, A., De Mascellis, R., De Michele, C., Langella, G., Manna, P., Marotta, L., Mileti, F. A., Minieri, L., Orefice, N., Valentini, S., Vingiani, S. and **Basile, A.**: A Web-based spatial decision supporting system for land management and soil conservation, *Solid Earth*, 6(3), 903–928, doi:10.5194/se-6-903-2015, 2015.

Bonfante, A., Monaco, E., Alfieri, S. M., De Lorenzi, F., Manna, P., **Basile, A.** and Bouma, J.: Climate change effects on the suitability of an agricultural area to maize cultivation: Application of a new hybrid land evaluation system, *Adv. Agron.*, 133, 33–69, doi:10.1016/bs.agron.2015.05.001, 2015.

Coppola, A., Comegna, A., Dragonetti, G., Gerke, H. H. and **Basile, A.**: Simulated Preferential Water Flow and Solute Transport in Shrinking Soils, *Vadose Zo. J.*, 14(9), 0, doi:10.2136/vzj2015.02.0021, 2015.

Vingiani, S., Mele, G., De Mascellis, R., Terribile, F. and **Basile, A.**: Volcanic soils and landslides: A case study of the island of Ischia (southern Italy) and its relationship with other Campania events, *Solid Earth*, 6(2), 783–797, doi:10.5194/se-6-783-2015, 2015.

Monaco, E., Bonfante, A., Alfieri, S. M., **Basile, A.**, Menenti, M. and De Lorenzi, F.: Climate change, effective water use for irrigation and adaptability of maize: A case study in southern Italy, *Biosyst. Eng.*, 128, 82–99, doi:10.1016/j.biosystemseng.2014.09.001, 2014.

Menenti, M., Alfieri, S. M., Bonfante, A., Riccardi, M., **Basile, A.**, Monaco, E., ... & De Lorenzi, F. Adaptation of irrigated and rainfed agriculture to climate change: the vulnerability of production systems and the potential of intraspecific biodiversity (case studies in Italy). *Handbook of Climate Change Adaptation*, 1-35. 2014

Coppola, A., Comegna, A., Dragonetti, G., De Simone, L., Lamaddalena, N., Zdruli, P. and **Basile, A.**: A Stochastic Texture-based Approach for Evaluating Solute Travel Times to Groundwater at Regional Scale by Coupling GIS and Transfer Function, *Procedia Environ. Sci.*, 19, 711–722, doi:10.1016/j.proenv.2013.06.080, 2013.

Comegna, A., Coppola, A., Dragonetti, G., Severino, G., Sommella, A. and **Basile, A.**: Dielectric properties of a tilled sandy volcanic-vesuvian soil with moderate andic features, *Soil Tillage Res.*, 133, 93–100, doi:10.1016/j.still.2013.06.003, 2013.

Coppola A., Dragonetti G., Comegna A., Lamaddalena N., Caushi B., Haikal M.A., and **Basile A.**: Measuring and modeling water content in stony soils, *Soil tillage Res.*, 128, 9–22, 2013.

Wang, X. P., Quan, G. J., Pan, Y. X., Hu, R., Zhang, Y. F., Tedeschi, A., **Basile, A.**, Comegna, A., Coppola, A. and de Mascellis, R.: Comparison of hydraulic behaviour of unvegetated and vegetation-stabilized sand dunes in arid desert ecosystems, *Ecohydrology*, 6(2), 264–274, doi:10.1002/eco.1265, 2013.

Coppola, A., Gerke, H. H., Comegna, A., **Basile, A.** and Comegna, V.: Dual-permeability model for flow in shrinking soil with dominant horizontal deformation, *Water Resour. Res.*, 48(8), doi:10.1029/2011WR011376, 2012.

Perego, A., **Basile, A.**, Bonfante, A., De Mascellis, R., Terribile, F., Brenna, S. and Acutis, M.: Nitrate leaching under maize cropping systems in Po Valley (Italy), *Agric. Ecosyst. Environ.*, 147(1), 57–65, doi:10.1016/j.agee.2011.06.014, 2012.

**Basile, A.**, Buttafuoco, G., Mele, G. and Tedeschi, A.: Complementary techniques to assess physical properties of a fine soil irrigated with saline water, *Environ. Earth Sci.*, 66(7), 1797–1807, doi:10.1007/s12665-011-1404-2, 2012.

Coppola, A., Gerke, H. H., Comegna, A., **Basile, A.** and Comegna, V.: Dual-permeability model for flow in shrinking soil with dominant horizontal deformation, *Water Resour. Res.*, 48(8), 1–21, doi:10.1029/2011WR011376, 2012.

Bonfante, A., **Basile, A.**, Manna, P. and Terribile, F.: Use of Physically Based Models to Evaluate USDA Soil Moisture Classes, *Soil Sci. Soc. Am. J.*, 75(1), 181, doi:10.2136/sssaj2009.0403, 2011.

Coppola, A., Comegna, A., Dragonetti, G., Dyck, M., **Basile, A.**, Lamaddalena, N., Kassab, M. and Comegna, V.: Solute transport scales in an unsaturated stony soil, *Adv. Water Resour.*, 34(6), 747–759, doi:10.1016/j.advwatres.2011.03.006, 2011.

Coppola, A., **Basile, A.**, Wang, X., Comegna, V., Tedeschi, A., Mele, G. and Comegna, A.: Hydrological behaviour of microbiotic crusts on sand dunes: Example from NW China comparing infiltration in crusted and crust-removed soil, *Soil Tillage Res.*, 117, 34–43, doi:10.1016/j.still.2011.08.003, 2011.

Bonfante A. **Basile A.**, Langella, G., Manna P., Terribile F.: A physically oriented approach to analysis and mapping of terroirs. *Geoderma*, 167, 103–117, 2011.

Terribile, F., Coppola, A., Langella, G., Martina, M., & **Basile, A.** Potential and limitations of using soil mapping information to understand landscape hydrology. *Hydrology and Earth System Sciences*, 15(12), 3895-3933. 2011

Coppola, A., Comegna, A., Dragonetti, G., Dyck, M., **Basile, A.**, Lamaddalena, N., Kassab, M. and Comegna, V.: Solute transport scales in an unsaturated stony soil, *Adv. Water Resour.*, 34(6), 747–759, doi:10.1016/j.advwatres.2011.03.006, 2011.

Bonfante, A., **Basile, A.**, Acutis, M., De Mascellis, R., Manna, P., Perego, A. and Terribile, F.: SWAP. CropSyst and MACRO comparison in two contrasting soils cropped with maize in Northern Italy.pdf, *Agric. Water Manag.*, 97(7), 1051–1062, 2010.

Langella, G., **Basile, A.**, Bonfante, A. and Terribile, F.: High-resolution space-time rainfall analysis using integrated ANN inference systems, *J. Hydrol.*, 387(3–4), 328–342, doi:10.1016/j.jhydrol.2010.04.027, 2010.