Antonello Bonfante: He is a Senior Researcher at CNR-ISAFOM (since 2011) and he was contracted Professor in Pedology at University of Salerno (Dep. of Chemistry and Biology, Degree course in Environmental Science, 2013-2018). He got the degree in Agricultural Science and Technology (110/110 and praise) in March 2002 at the University of Naples Federico II, Faculty of Agriculture of Portici (NA) discussing a thesis entitled "Grapevine Zoning in Telese Valley: a methodological approach"; in February 2006 he got the degree of Doctor of Philosophy in "Valorization and management of the Agro-Forest Resources" in applied Pedology, at the University of Naples "Federico II", discussing the thesis entitled "Determination of protecting capability of soils to the agricultural nitrate pollution: comparison between simulation models", which earned him the AISSA (Italian Association of Agrarian Scientific Society) doctoral award (2006). He was (2009-2014) member of the Soil Physics Commission of the Italian Society of Soil Science (SISS) for which is currently president of "Soil Use and management" division. Moreover, he is a member of the European Geoscience Union (EGU) (since 2009) and the Italian Society of Pedology (SIPE). In 2019 he was appointed member of the Regional Observatory on Precision Agriculture of the Campania Region (ORAdP) (Presidential Decree No. 89 of 13/06/2019). In 2018 he obtained the national qualification for associated professor in Pedology (National Scientific Qualification), sector of Agricultural Chemistry, Agricultural Genetics and Pedology (07 / E1), call for applications 1532/2016.

In 2013 he was part of a joint CNR-ISAFOM and University of Naples Federico II (Agricultural Dept.) team identified by FAO for the evaluation of territorial assessment models applied to different scales by FAO itself (GAEZ, MOSAICC, AQUACROP, etc..), producing an internal report of 239 pages where the limits and advantages of each model, currently applied, were shown and explained (review work "Assessment of some FAO's tools for land evaluation and crop modeling: GAEZ, LRIMS, BEFS-TOOLS, MOSAICC, AQUACROP and ALES ". Terrible F., Basile A., Bonfante A., et al., 2013). In 2014 he was keynote speaker of session "Soil ecosystem under climate change" [C4.1 3] at 20° World Congress of Soil Science in South Korea in 2014. In 2015 he was invited by the editor Prof. D. Sparks to write chapter two "Climate Change Effects on the Suitability of an Agricultural Area to Maize Cultivation: Application of a new Hybrid Land Evaluation System" in book number 133 of Advances in Agronomy book series.

In 2017 he was invited by the president of IUSS (International Union of Soil Sciences), prof. Rattan Lal, writing a chapter for the IUSS book "Soil and Sustainable Development Goals", entitled "Soil science solutions for advancing SDG 2 towards resilient agriculture" published in July 2018 by Catena Soil Sciences, E. Schweizerbart'sche Verlagsbuchhandlung (Bonfante et al., 2018). Among his collaborations are important to underline his activities with em. Prof. in Soil Science Johan Bouma, with whom has written several papers, the last one "Highlight article" on SOIL journal on the topic of soil health (https://www.soil-journal.net/5/1/2019/).

Currently he is the scientific manager of:

1. Joint Research & Development Projects between Italy and Israel "**AN ADVANCED LOW COST SYSTEM FOR FARM IRRIGATION SUPPORT – LCIS"** funded by MAECI - MINISTRY OF FOREIGN AFFAIRS AND INTERNATIONAL COOPERATION of Italian Republic (10/08/2017-10/08-2019)
2. CNR-ISAFOM unit in the regional project **"Reducing the distance between research and farmers (RURAL)"** PSR Campania 2014-2020. Measure 16 - Sub-measure 16.5 (in progress).
3. CNR unit for the National Project (PRIN 2017) **"Influence of Agro-climatic conDitions on the microbiome and genetic expression of grApevines for the Production of red wines: a mulTisciplinary approach"** ADAPT project (in progress).
4. CNR-ISAFOM unit in regional project **"Sustainable models of cultivation of the Greco grapevine: efficiency of use of resources and application of 'Footprint family' indicators"** – GREASE (Greco EfficienzA uSo risorsE). PSR Campania 2014-2020. Measure 16 - Sub-measure 16.1.2 (in progress).
5. CNR-ISAFOM unit in national project MISE - Ministry for Economic Development, AGRIFOOD sector, "**SENSOBIO - BIOdegradable SENsors for Precision Agriculture**" (in progress)
6. Coordinator of WP3 Agrotech of the DISBA project, **Foe Bioeconomy** (ongoing) and head of the Institute on planning.
7. CNR-ISAFOM unit in international project EIT-Food **"MOSOM - Mapping of Soil Organic Matter"** (in progress)

He is currently a co-guest and guest editor for:

- the special issue "New Frontiers of Multiscale Monitoring, Analysis and Modeling of Environmental Systems via Integration of Remote and Proximal Sensing Measurements" in the journal MDPI Remote Sensing
- Research Topic "Biogeosciences and Wine: the Management and Environmental Processes that Regulate the Terroir Effect in Space and Time" on Frontiers in Earth Science.
- the special issue "Monitoring Sustainable Development Goals" in the journal MDPI Remote Sensing
- the special issue "Remote and Proximal Sensing Applied to Agriculture and Forest Science" on Applied Sciences (MDPI)

and part of the editorial board of:

- Agriculture journal (2.95 IF) - https://www.mdpi.com/journal/agriculture/editors (Editorial board)
- Frontiers in Ecology and Evolution - Models in Ecology and Evolution (4.17 IF) (Review Editors)

Research: Attention was paid to the analysis and improvement of knowledge and use of soil properties and processes. Dr. Bonfante has always posed his attention to combine the standard qualitative evaluation approaches on soil land use (Land Evaluation) with quantitative ones (Simulation modelling application), in

order to incorporate in dynamic way, the soil processes (e.g., soil water balance) affecting the soil-plant and atmosphere system (SPA) at different spatial scale (e.g., farm, district, region).

Four are the most important fields of analysis in which Bonfante emphasize and claim the role of soil: i) Viticulture terroir mapping and analysis and ii) Evaluation of climate change effects on crop land use in regards to food security and local farm communities' resilience; iii) SPA system analysis and Soil Health; and iv) Precision agriculture.

I. In 2011 (Bonfante et al., 2011) Bonfante and coauthors introduced for the first time in literature the use of a physically based simulation model of SPA system in viticultural zoning procedure at regional scale, emphasizing the role of soil physical properties in the crop responses in terms of grape quality, with a dynamic index based on crop water stress (CWSI) derived from the soil water balance. This concept was also expressed at farm scale in 2015 (Bonfante et al., 2015, "Functional homogeneous zones (fHZs) in viticultural zoning procedure: An Italian case study on Aglianico vine". SOIL 1, 427–441.) defining a new term in viticulture, strictly linked to soil characteristics and behavior, to classify the suitable areas to grapevine production: functional homogeneous zones (fHZs). This last was also used to evaluate the effects on climate change on grape quality production in an Italian case study on Aglianico wine (Bonfante et al., 2017), the first example in literature of grape quality prediction to climate change through a simulation model application. Moreover, He has identified and used a new "dynamic viticultural zoning" able to combine soil-plant-atmosphere system processes with climate change to evaluate the expected grape qualities and the terroir concept resilience. This last procedure was applied in Valle Telesina (BN) in Southern Italy and published in 2018 in Science of Total Environment Journal.

II. In 2015 (Bonfante et al., 2015) he proposed a new hybrid land evaluation system for the identification of land suitability to a specific crop (the example case study was maize) under climate change. This research work has put together qualitative and quantitative land evaluation approaches in a pro-active key-out procedure. The procedure was presented at 20° World Congress of Soil Science in South Korea in 2014 in the session "Soil ecosystem under climate change" [C4.1 3], in which Bonfante was the keynote speaker. Successively, after the editor's request (Prof. D. Sparks) it was published on Advances in Agronomy book series number 133, chapter two "Climate Change Effects on the Suitability of an Agricultural Area to Maize Cultivation: Application of a new Hybrid Land Evaluation System". Currently, a new approach to sustain the food production and local farming communities, by means of cultivation of giant reed (Arundo donax L.) in the marginal soils and improving the farmers' incomes, has been published (Bonfante et al., 2017).

III. The importance of soil's role in other scientific sectors, its importance in the agricultural context, and its health to provide ecosystem functions has been treated in different papers from 2015. In particular, in 2017, Bonfante and coauthors showed the importance of soil spatial variability in an experimental field on barley and wheat in Lebanon, clearly reporting how this information can affect the statistical results in the evaluation of the compared treatments. Moreover, by means of a metanalysis of recent

literature on field experiments in agriculture (109 papers investigated), they have shown how the soil information is not reported and then used by agricultural scientific communities in the field experiments, with a significant increase of uncertainty of their conclusions. In the last years, he posed attention to the study of soil health issues under climate change and the effects of soil OM increase in the expression of soil ecosystem function (biomass production) (Bonfante et al., 2019,2020a and 2020b). Each research work realized was supported by using the simulation model of SPA system SWAP (Kroes et al., 2009) to evaluate the effects of soil characteristics, degradation processes or OM increase on crop biomass production under Climate Change scenarios (RCP 4.5 and 8.5).

IV. The know-how acquired in its career on the importance of soil characteristics and its spatial variability on crop responses has led to creating a CNR lab dedicated to the Supporting of Precision Agriculture (SPA). In this lab, the soil is a key point in the approaches dedicated to planning precision agriculture practices (e.g., plant monitoring, management,...etc.). In particular, soil spatial variability is investigated through a pedological survey supported by a geophysical survey. Soil data acquired are crossed with micro-geomorphological information derived by DTM analysis (produced by UAV flight with RGB camera), and the homogeneous field zones identify. Successively different approaches, as SPA model application (Bonfante et al., 2015) or crop monitoring through UAV multispectral camera, allow to define the fHZs for precision agriculture purposes. In this context, in 2017, through an International project with Israeli partners, he has investigated the use of different approaches to irrigation management by means of a DSS dedicated to irrigation support (LCIS project, Bonfante et al., 2019).

Among his collaborations, it is important to underline his activities with em. Prof. in Soil Science Johan Bouma, with whom has written several papers, the last one "Highlight article" on SOIL journal on the topic of soil health (https://www.soil-journal.net/5/1/2019/).

In his carrier, he has demonstrated a strong interest in contributing towards education and extensions. This applies to the following:

- **University courses:** From November 2013 to 2018, he was a Contract Professor in Pedology at the University of Salerno. Dep. of Chemistry and Biology, Degree course in Environmental Science.
- **Large number of meetings at farms:** during the Italian projects “ZOVISA” (2011-2013), and the European LIFE + project “SOILCONSWEB” (2010-2015) he has participated actively in the organization of meeting with farmers of study areas involved in the projects, discussing with them on several environmental topics in which the soil was a fundamental part. Moreover, within the ACLIMAS project (Adaptation to Climate Change of Mediterranean Agricultural Systems” he had a meeting in the field with farmers of Bekaa Valley (Lebanon) on irrigation management strategy for local soils under climate change.

  Finally, in the last two years, he had numerous meetings in Israel with farmers and technicians (LCIS project).

- **Large number of seminars:** he has realized a lot of seminary in Italian scientific context, the most important realized at international level, in particular:

  2013 - “Soil smart practices” in Training course on "Climate Smart Agriculture" (Beirut, Libano);
  2014 – Keynote speaker at 20° World Congress of Soil Science in South Korea in 2014 in the session "Soil ecosystem under climate change" [C4.1 3].
  2016 - “Viticultural zoning supported by physically based model of Soil, Plant and Atmosphere system” at Oakville Experimental Station of University of California, Davis-CA ;
  2018 - Keynote speaker "Water First! Building a Sustainable Future" at "The Leading Food Innovation Summit in the World" Seeds&Chips (https://seedsandchips.com)
  2018 - Keynote speaker at “Technologybiz 2018”, session "Research and ideas for Business" (https://tbiz.it/)
  2019 “An advance Low-cost system for farm irrigation support” at Agriculture Engineering Institute - Volcani Center campus in Bet-Dagan (Tel Aviv, Israel) (2019).
  2019 Keynote speaker “Cambiamenti climatici: strategie di adattamento delle colture per favorire la resilienza degli agroecosistemi” XVI AISSA congress (Italian Association of Agricultural Scientific Societies) “The effects of climate change on agriculture, forests and the rural environment in Italy” at Viterbo.
  2019 – Invited speaker at CLIM4VITIS DAY H2020 EU project “Climate change impact mitigation for European viticulture -CLIM4VITIS” at University of Florence with the lecture “Climate change and viticultural sector”.
  2020 – Invited speaker at the University of California DAVIS, during the “Advanced grapevine irrigation scheduling and management” conference with the lecture “Multiple spatial and temporal resolution system to support precision viticulture”.
  2021 - Invited speaker at the ASA, CSSA, and SSA Annual Meeting "A Creative Economy for Sustainable Development" Salt Lake City, UT, November 7-10 2021. Contribution: "Using soil types as carriers of dynamic SDG-related information obtained by modelling"

- **Preparation of Dissemination materials and books:** Bonfante with other co-authors have realized: i) Inside of AGROSCENARI project, a State-Regions document was drawn up on the implementation criteria of regional rural development plans under new Common Agricultural Policy (CAP) 2014-2020; ii) Dissemination materials (research notes for farmers and stakeholders , books, brochure) from three Italian regional project of CNR on groundwater nitrate pollution from the agricultural field (1) Lombardia region "Activation of a network for monitoring the quality of the soil/water in Lombardia – ARMOSA-IDRO project” (ERSAF, 2003-2006), (2) Campania region "Establishment of a methodology to quantify nitrate vulnerability in two areas of Campania region" (2004-2007); and (3) Calabria region "Analysis and modelling of nitrate dynamic in some pedo-environments of Calabria region" (2007-2009) were done. iii) Chapter of Handbook of Climate Change Adaptation” (2014). [Document n°21]; iv) Chapter of the book The soils of Italy (2013). [Document n° 23]; v). The white book “Challenges and opportunities of

rural development for mitigation and adaptation to climate change" produced by the Ministry of Agriculture and Forestry (2011).

National and international acknowledgments

- Award for the best poster of Session 1.4.1 "Soil classification and information demand" to the 19th World Congress of Soil Science "Soil solutions for a changing world" Brisbane 1- August 6, 2010. With the contribution "Use of physically-based models and Soil Taxonomy to identify soil moisture classes: Problems and proposals" A. Bonfante, A. Basile, P. Manna, F. Terribile.
- Certificate of Scientific Merit, "Certamen pedologico 2007" Italian Society of Soil Science. Presentation of contribution "Determination of protective soil capability against the water pollution caused by nitrates from agricultural sources through the application of physically based models: the example of Sibari Plain (CS)"
- PhD Award of Italian Association of Agricultural Scientific Societies (AISSA) in Pedology and Soil Conservation. The awarded PhD thesis was " Determination of protective capacity of soils to nitrate pollution from agricultural sources: comparison between simulation models"
- Best scientific contribution award 2020 of Department of Bio Agri-food Sciences DiSBA – CNR, with the work entitled "A smart multiple spatial and temporal resolution system to support precision agriculture from satellite images: Proof of concept on Aglianico vineyard" published on Remote Sensing of Environment.

At this moment he has 42 papers, 960 citations and 16 h-index (Scopus).

Principal publication :

- ✓ Accomando, F.; Vitale, A.; Bonfante, A.; Buonanno, M.; Florio, G. Performance of Two Different Flight Configurations for Drone-Borne Magnetic Data. Sensors 2021, 21, 5736. https://doi.org/10.3390/s21175736
- ✓ Ezzy, H.; Charter, M.; Bonfante, A.; Brook, A. How the Small Object Detection via Machine Learning and UAS-Based Remote-Sensing Imagery Can Support the Achievement of SDG2: A Case Study of Vole Burrows. Remote Sens. 2021, 13, 3191. https://doi.org/10.3390/rs13163191
- ✓ Cirillo, C., Arena, C., Rouphael, Y., Caputo, R., Amitrano, C., Petracca, F., De Francesco, S., Vitale, E., Erbaggio, A., Bonfante, A., & De Micco, V. (2021). Counteracting the negative effects of copper limitations through the biostimulatory action of a tropical plant extract in grapevine under pedo-climatic constraints. Frontiers in Environmental Science, 9, 76. doi: 10.3389/fenvs.2021.587550
- ✓ Brillante, L., Bonfante, A., Bramley, R. G. V., Tardaguila, J. and Priori, S.: Unbiased Scientific Approaches to the Study of Terroir Are Needed!, Front. Earth Sci., 8, 493, doi:10.3389/feart.2020.539377, 2020.

- ✓ Bonfante, A., Basile A., Bouma J., 2020. Targeting the soil quality and soil health concepts when aiming for the United Nations Sustainable Development Goals and the EU Green Deal. SOIL (open discussion) https://doi.org/10.5194/soil-2020-28 (https://www.soil-discuss.net/soil-2020-28/)
- ✓ Brook, A., De Micco, V., Battipaglia, G., Erbaggio, A., Ludeno, G., Catapano, I., Bonfante, A., 2020. A smart multiple spatial and temporal resolution system to support precision agriculture from satellite images: Proof of concept on Aglianico vineyard. Remote Sensing of Environment, Vol. 240, April 2020, https://doi.org/10.1016/j.rse.2020.111679
- ✓ Bonfante, A., Basile, A., Bouma, J. 2020. Exploring the effect of varying soil organic matter contents on current and future moisture supply capacities of six Italian soil. Geoderma 361C (2020) 114079, https://doi.org/10.1016/j.geoderma.2019.114079
- ✓ Manna, P., Bonfante, A., Colandrea, M., Di Vaio, C.,....Basile, A., 2020. A geospatial decision support system to assist olive growing at the landscape scale. Comput. Electron. Agric. 168. https://doi.org/10.1016/j.compag.2019.105143
- ✓ Bonfante, A., Monaco, E., Manna, P., De Mascellis, R., Basile, A., Buonanno, M., Cantilena, G., Esposito, A., Tedeschi, A., De Michele, C., Belfiore, O., Catapano, I., Ludeno, G., Salinas, K., Brook, A., 2019. LCIS DSS—An irrigation supporting system for water use efficiency improvement in precision agriculture: A maize case study. Agric. Syst. 176, 102646. https://doi.org/10.1016/J.AGSY.2019.102646
- ✓ Polinova, M., Salinas, K., Bonfante, A., Brook, A., 2019. Irrigation Optimization Under a Limited Water Supply by the Integration of Modern Approaches into Traditional Water Management on the Cotton Fields. Remote Sens. 11, 2127. https://doi.org/10.3390/rs11182127
- ✓ Abi Saab, M.T., Houssemeddine Sellami, M., Giorio, P., Basile, A., Bonfante, A., Rouphael, Y., Fahed, S., Jomaa, I., Stephan, C., Kabalan, R., Massaad, R., Todorovic, M., Albrizio, R., 2019. Assessing the Potential of Cereal Production Systems to Adapt to Contrasting Weather Conditions in the Mediterranean Region. Agronomy 9, 393. https://doi.org/10.3390/agronomy9070393
- ✓ 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, 275. https://doi.org/10.3390/w11020275
- ✓ 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. Mitig. Adapt. Strateg. Glob. Chang. https://doi.org/10.1007/s11027-018-9820-1
- ✓ Bonfante, A., Terribile, F., Bouma, J., 2019. Refining physical aspects of soil quality and soil health when exploring the effects of soil degradation and climate change on biomass production: an Italian case study. SOIL 5, 1–14. https://doi.org/10.5194/soil-5-1-2019
- ✓ Bonfante, A., Monaco, E., Langella, G., Mercogliano, P., Bucchignani, E., Manna, P., Terribile, F., 2018. A dynamic viticultural zoning to explore the resilience of terroir concept under climate

change. Sci. Total Environ. 624. https://www.sciencedirect.com/science/article/pii/S004896971733454X

- ✓ Bonfante A., Basile A., Langella G., Manna P., T.F., 2018. Soil science solutions for advancing SDG 2 towards resilient agriculture, in: Kosaki, E.. R.L.R.H.T. (Ed.), Soil and Sustainable Development Goals. Schweizerbart Science Publishers, Stuttgart, Germany, p. 196.
- ✓ Bonfante, A., Alfieri, S.M., Albrizio, R., Basile, A., De Mascellis, R., Gambuti, A., Giorio, P., Langella, G., Manna, P., Monaco, E., Moio, L., Terribile, F., 2017. 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. https://doi.org/10.1016/j.agsy.2016.12.009
- ✓ Bonfante, A., Impagliazzo, A., Fiorentino, N., Langella, G., Mori, M., Fagnano, M., 2017. Supporting local farming communities and crop production resilience to climate change through giant reed (Arundo donax L.) cultivation: An Italian case study. Sci. Total Environ. 601–602. https://doi.org/10.1016/j.scitotenv.2017.05.214
- ✓ Bonfante, A., Sellami, M.H., Abi Saab, M.T., Albrizio, R., Basile, A., Fahed, S., Giorio, P., Langella, G., Monaco, E., Bouma, J., 2017. The role of soils in the analysis of potential agricultural production: A case study in Lebanon. Agric. Syst. 156. https://doi.org/10.1016/j.agsy.2017.05.018
- ✓ De Lorenzi, F., Alfieri, S.M., Monaco, E., Bonfante, A., Basile, A., Patanè, C., Menenti, M., 2017. Adaptability to future climate of irrigated crops: The interplay of water management and cultivars responses. A case study on tomato. Biosyst. Eng. 157. https://doi.org/10.1016/j.biosystemseng.2017.02.007
- ✓ Manna, P., Basile, A., Bonfante, A., D'Antonio, A., De Michele, C., Iamarino, M., Langella, G., Mileti., F.A., Pileri, P., Vingiani, S., Terribile, F.., 2017. Soil Sealing: Quantifying Impacts on Soil Functions by a Geospatial Decision Support System. L. Degrad. Dev. 28, 2513–2526. https://doi.org/10.1002/ldr.2802
- ✓ Terribile, F., Bonfante, A., D'Antonio, A., De Mascellis, R., De Michele, C., Langella, G., Manna, P., Mileti, F.A., Vingiani, S., Basile, A., 2017. A geospatial decision support system for supporting quality viticulture at the landscape scale. Comput. Electron. Agric. 140. https://doi.org/10.1016/j.compag.2017.05.028
- ✓ Bonfante, A, Agrillo, A., Albrizio, R., Basile, A., Buonomo, R., De Mascellis, R., Gambuti, A., Giorio, P., Guida, G., Langella, G., others, 2015. Functional homogeneous zones (fHZs) in viticultural zoning procedure: an Italian case study on Aglianico vine. SOIL 1, 427. https://doi.org/10.5194/soil-1-427-2015
- ✓ Bonfante, A., Bouma, J., 2015. The role of soil series in quantitative land evaluation when expressing effects of climate change and crop breeding on future land use. Geoderma 259–260, 187–195. https://doi.org/10.1016/j.geoderma.2015.06.010

- ✓ Bonfante, A., Monaco, E., Alfieri, S.M., De Lorenzi, F., Manna, P., Basile, A., Bouma, J., 2015. 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. https://doi.org/10.1016/bs.agron.2015.05.001
- ✓ Bouma, J., Kwakernaak, C., Bonfante, A., Stoorvogel, J.J., Dekker, L.W., 2015. Soil science input in transdisciplinary projects in the Netherlands and Italy. Geoderma Reg. 5, 96–105. https://doi.org/10.1016/j.geodrs.2015.04.002
- ✓ Menenti, M., Alfieri, S.M., Bonfante, A., Riccardi, M., Basile, A., Monaco, E., De Michele, C., De Lorenzi, F., 2015. 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. https://doi.org/10.1007/978-3-642-40455-9_54-1
- ✓ Terribile, F., Agrillo, A., Bonfante, A., Buscemi, G., Colandrea, M., D'Antonio, A., De Mascellis, R., De Michele, C., Langella, G., Manna, P., others, 2015. A Web-based spatial decision supporting system for land management and soil conservation. Solid Earth 6, 903. https://doi.org/10.5194/se-6-903-2015
- ✓ Monaco, E., Bonfante, A., Alfieri, S.M., Basile, A., Menenti, M., De Lorenzi, F., 2014. Climate change, effective water use for irrigation and adaptability of maize: A case study in southern Italy. Biosyst. Eng. 128, 82–99. http://dx.doi.org/10.1016/j.biosystemseng.2014.09.001
- ✓ Reyer, C.P.O., Leuzinger, S., Rammig, A., Wolf, A., Bartholomeus, R.P., Bonfante, A., de Lorenzi, F., Dury, M., Gloning, P., Abou Jaoudé, R., Klein, T., Kuster, T.M., Martins, M., Niedrist, G., Riccardi, M., Wohlfahrt, G., de Angelis, P., de Dato, G., François, L., Menzel, A., Pereira, M., 2013. A plant's perspective of extremes: Terrestrial plant responses to changing climatic variability. Glob. Chang. Biol. 19, 75-89 (2013) doi: 10.1111/gcb.12023
- ✓ Perego, A., Basile, A., Bonfante, A., De Mascellis, R., Terribile, F., Brenna, S., Acutis, M., 2012. Nitrate leaching under maize cropping systems in Po Valley (Italy). Agric. Ecosyst. Environ. 147, 57–65. doi:10.1016/j.agee.2011.06.014
- ✓ Bonfante A., Basile A., Langella G., Manna P., Terribile F., 2011. A physically oriented approach to analysis and mapping of terroirs. Geoderma Vol. 167–168, November 2011, Pages 103-117. https://doi.org/10.1016/j.geoderma.2011.08.004
- ✓ Bonfante, A., Basile, A., Manna, P., Terribile, F., 2011. Use of Physically Based Models to Evaluate USDA Soil Moisture Classes. Soil Sci. Soc. Am. J. 75, 181. doi:10.2136/sssaj2009.0403
- ✓ Bonfante, A., Basile, A., Acutis, M., De Mascellis, R., Manna, P., Perego, A., Terribile, F., 2010. SWAP, CropSyst and MACRO comparison in two contrasting soils cropped with maize in Northern Italy. Agric. Water Manag. 97, 1051–1062. https://doi.org/10.1016/j.agwat.2010.02.010
- ✓ Manna, P., Basile, A., Bonfante, A., De Mascellis, R., Terribile, F., 2009. Comparative Land Evaluation approaches: An itinerary from FAO framework to simulation modelling. Geoderma 150, 367–378. DOI: 10.1016/j.geoderma.2009.02.020

- ✓ Menenti, M., de Lorenzi, F.D., Bonfante, A., Cavallaro, V., Lavini, A., Raccuia, A., D'Andria, R., Leone, A., de Mascellis, R., 2008. Biodiversity of most important Mediterranean crops: A resource for the adaptation of agriculture to a changing climate | Biodiversità delle principali colture Mediterranee: Una risorsa per l'adattamento dell'agricoltura al clima che cambia. Ital. J. Agrometeorol. ISSN:1824-8705, SJR 0.251, SNIP 0.197
- ✓ Scaglione, G., Pasquarella, C., Federico, R., Bonfante, A., Terribile, F., 2008. A multidisciplinary approach to grapevine zoning using GIS technology: An example of thermal data elaboration. Vitis - J. Grapevine Res. 47. ISSN:0042-7500

Other publication:

- ✓ Bonfante, A. Basile, G. Langella, P. Manna, and F. Terribile, 2018. Soil science solutions for advancing SDG 2 towards resilient agriculture. Chapter 13 of "Soil and Sustainable Development Goals" book of IUSS Ed.: Rattan Lal; Rainer Horn; Takashi Kosaki, 2018. VII, 196 pages, 49 figures, 21 tables, US-ISBN: 1-59326-269-8. GeoEcology Essays in July 2018 by Schweizerbart
- ✓ Terribile F., Bonfante A., Manna P., Minieri L., Langella G., Basile A. 2016. I suoli e i territori del vino: Le DOCG Taurasi e Aglianico del Taburno. L'Enologo (Milano), Editore: Associazione Enologi Enotecnici Italiani. Pag. 32-39. ISSN: 1593-6112.
- ✓ F. Terribile, A. Basile, A. Bonfante, A. Carbone, C. Colombo, G. Langella, M. Iamarino, P. Manna, L. Minieri, S. Vingiani. 2013. Future soil issue. Chapter in "The soils of Italy" EAC Costantini and C. Dazzi, Springer. Pag. 303-348. ISBN 978-94-007-5641-0
- ✓ Valentini R., Bonfante A., De Lorenzi F., ed altri. 2011. Libro Bianco. Sfide ed opportunità dello sviluppo rurale per la mitigazione e l'adattamento ai cambiamenti climatici. Collana "L'agricoltura al beneficio di tutti". Ministero delle Politiche Agricole Alimentari e Fo, Roma, 2011 ISBN/ISSN: 978-88-96095-11-9
- ✓ P. Manna e A. Bonfante., 2010. Un confronto tra approcci per la valutazione del territorio: dagli schemi FAO ai modelli di simulazione in un caso studio della provincia Lodigiana. Contributo Libro "In nome del Suolo", Edz. Le Penseur, Capitolo 7. da pag. 145 a 168. Curatori del volume, Prof. Carmelo Dazzi e Prof. Sergio Vacca. ISBN 978-88-95315-09-6, I° Edizione, dicembre 2010.
- ✓ Bonfante A. 2006. Determinazione della capacità protettiva dei suoli dall'inquinamento da nitrati di origine agricola: confronto fra modelli di simulazione. Tesi di Dottorato, Università degli Studi di Napoli Federico II. (http://www.fedoa.unina.it/2907/)
- ✓ Bonfante A. e Terribile F. 2006. Zonazione viticola; un approccio su base fisica. IL SUOLO, Bollettino dell'Associazione Italiana Pedologi – AIP, numero 1-3 2006
- ✓ Bonfante A., Basile A., Buonanno M., Manna P., Terribile F. 2005. Un esempio metodologico di utilizzo della modellistica idrologica e delle procedure GIS nella zonazione viticola. Bollettino della Società Italiana della Scienza del Suolo (SISS). Volume 54, 2005 – No. 1-2