Piero Lionello: Summary

Piero Lionello is full professor of Atmospheric Physics and Oceanography, director of the Master in Meteorology and Physical Oceanography and of the Museum of the Environment at the University of Salento, coordinator of the PhD programme in "Biological and Environmental Sciences and Technologies". He is chair of the MedCLIVAR (Mediterranean CLImate Variability) network, leading author of the "Europe" and "Mediterranean" chapters of IPCC WG2-AR6 (Intergovernmental Panel on Climate Change) and coordinating lead author of chapter 2 "Drivers of Change" of the 1st Mediterranean Assessment report published by the MedECC network (Mediterranean Experts on Climate and Environmental Change). He has played important roles in the international scientific community, as co-coordinator of the HyMeX (Hydrological Mediterranean Experiment) program, member of the Scientific Council of the European Center for Medium Range Weather Forecasts (ECMWF), contributing to numerous projects and initiatives. Piero Lionello is author of more than 150 publications in international scientific journals on modelling, prediction of coastal waves and floods; air-sea interaction, evolution and impacts of climate change in the Mediterranean region, climate dynamics at global scale, synoptic climatology and extreme events. His activity includes the organization of scientific meetings and international schools and his involvement as a lecturer and invited speaker. He has carried out an intense editorial activity, which has led to the publication of three books and numerous thematic collections.

Career

Piero Lionello obtained his degree in physics Magna cum laude in 1984. From 1987 to 1992, he worked at CNR-ISDGM (I), MIT (USA), MPI für Meteorologie (D), ECMWF (UK), KNMI (NL). Later he worked as a researcher at the Department of Physics at the University of Padua (1992-1999) and associate professor at the University of Salento (1999-2016). Currently (since February 2016) he is full professor of Atmospheric Physics and Oceanography at the University of Salento.

Projects

Piero Lionello has contributed as principal investigator to several international projects: ECAWOM (European Coupled Atmosphere Wave Ocean Model, EU-MAST Program), STOWASUS02100 (STOrms, Waves, Surges Scenarios for 2100, Environment and Climate EU Program), CIRCE (Climate Change and Impact Research: the Mediterranean Environment, EU-FP6), WASSERMed (Water Availability and Security in Southern EuRope and the Mediterranean, EU-FP7), RISES-AM (Responses to Coastal Climate Change: Innovative Strategies for High End Scenarios - Adaptation and Mitigation , EU-fp7), SOCLIMPACT (DownScaling CLImate ImPACTs and decarbonisation pathways in EU islands, HORIZON2020), CLIMAST (Interdisciplinary training in climate sciences for Master's degree students, Erasmus+ programme of the EU. He has contributed to numerous Italian projects, three times as coordinator and has twice been responsible for a research unit on an Italian PRIN ("Progetti di ricerca di Rilevante Interesse Nazionale") project. In addition, he has contributed and also presently contributes to international initiatives such as WAM (WAve Model), IMILAST (Intercomparison of Mid Latitude Storm Diagnostics) and COWCLIP (Coordinated Ocean Wave Climate Project), MedWet (Mediterranean Wetlands Initiative), MEDECC (Mediterranean Experts on Climate and Environmental Change).

Scientific Network MedCLIVAR

Since 2003 he has promoted and coordinated the MedCLIVAR (Mediterranean Climate Variability) Scientific Network endorsed by CLIVAR-WCRP. In 2006 he was elected chairman of the steering committee, role that he has held throughout the whole duration of the project (supported by the European Science Foundation for the period 2006-2011 and continuing as independent network until now). MedCLIVAR-ESF organized 11 workshops and international meetings, 3 schools, and a program of international scientific exchanges involving 34 scientists visiting Italian, French, German, British, Spanish, Portuguese, Swiss and US centers. At the conclusion of funding from the ESF, Piero Lionello was reconfirmed as coordinator of MedCLIVAR, whose activities have successively led to six international conferences (Lecce 2011, Madrid 2012, Ankara 2014, Athens 2016, Belgrade 2018, Marrakesh 2022). The 2024 conference is currently underway, and will take place in Lecce Italy, 24-27

September 2024 as a joint initiative with SISC (Italian Society for Climate Science) as MedCLIVAR-SISC 2024. The MedCLIVAR project has allowed the development of a scientific network that studies the climate of the Mediterranean region, considering its various components in multiple time scales (from paleoclimate to climatic projections for the 21st century). The results of the network are presented in two books, "Mediterranean Climate Variability" and "The Climate of the Mediterranean Region: From the Past to the Future" published by Elsevier and edited by Prof. Piero Lionello.

Significant roles in the scientific community

He has held and plays other important roles in the international scientific community: President of the International Scientific Steering Committee of the HyMeX (Hydrological cycle in the Mediterranean eXperiment) project for two mandates (2008-2012), member of the Scientific Advisory Committee of the ECMWF Center for Medium-Range Weather Forecatsts) for two mandates (2009-2016), coordinator of the CIRCE EU-FP6 program's 'extreme events' research line member of the HyMeX Scientific Board. He is currently a member of the steering Group of MeDECC (2008-2020). At the national level, he was a member of the CORILA Experts Panel for the Study of the Effects of Climate Change on the Veneto Lagoon Environment and is a founding member of the SISC (Italian Society for Climate Sciences).

He has been Lead Author of IPCC AR7in two chapters WGII (chapter 13 Europe and cross-chapter 4 Mediterranean), Coordinating Lead Author of chapter 2 “drivers” of the MedECC 1st Mediterranean Assessment Report. He is presently coordinator of the MedECC special report on Coastal Risks in the Mediterranean.

Scientific activity

In chronological succession it has been engaged in Air-Sea Interaction , Forecast of Marine Weather Events and Development of Forecast Models and Procedures (including Data Assimilation), Extreme Events, Synoptic Climatology, Climate Models at Regional scale, Climate Evolution in the Mediterranean Region, climatic projections, climate change impacts and risks in the Mediterranean, global climate dynamics. His scientific activity is documented by a large number of publications widely cited in international scientific literature. Currently (3 September 2024) the main bibliographic databases report:

- Scopus: 153 publications with 12129 citations and a h-index of 44
- Web of Science: 124 publications with 10520 citations and a h-index of 41
- Google Scholar: 18244 citations with a h-index of 54

Editorial activity

He has done an intense editorial activity that has led to the publication of three books and numerous special issues. Beside the two already mentioned book of the MedCLIVAR network, he has also co-edited “The Mediterranean Sea: Temporal Variability and Spatial Patterns”. The list of special issues includes “Mediterranean climate: trends, variability and change" and "Climate Variability and Change in the Mediterranean Region" of Global and Planetary Change, "Synoptic Climatology" of Theoretical and Applied Climatology, "The Climate of Venetia and Northern Adriatic" of Physics and Chemistry of the Earth, "Understanding Dynamics and Current Developments of Extreme Climate in the Mediterranean Region" of Natural Hazards and Earth System Sciences, "The climate of the Mediterranean region: research progress and climate change impacts" of Regional Environmental Change, “"Climate change, extreme events and hazards in the Mediterranean region" *and* ““Coastal hazards and hydro-meteorological extremes” of Natural Hazards and Earth System Sciences. Presently he is editing the special issue “The climate of the Mediterranean region at multiple time and spatial scales”. He is currently in the editorial team of Natural Hazards and Earth System Sciences (NHESS), published by Copernicus Publications on behalf of EGU (European Geosciences Union), of “Scientific data” of the Nature prtfolio, and of the Copernicus “Ocean State Report”.

Organization of congresses, meetings and schools

He has held numerous international meetings (in the context of MedCLIVAR, EGU, EMS-ECA, IUGG) and schools. In particular, since 2003 until 2021 he has organized a session of the current EGU (formerly EGS) dedicated to the Mediterranean climate. He has played an important role (as conference chair or member of the scientific committee) in conferences, meetings and schools of the MedCLIVAR network.

Teaching activity and responsibilities

He currently teaches at the University of Salento the courses: "Climate dynamics" (for the master's degree in "Environmental Sciences"), "Fundamentals of meteorology and physical oceanography" (for the batchlor degree in "Science and Technology for the" Environment ")," Oceanography of marginal seas and of the coastal zone "(for the Master Degree in Coastal and Marine Biology and Ecology). He has extensive experience in university-level teaching and supervising doctoral dissertations and undergraduate theses. He has been many time invited for seminars and talks at national and international scientific meetings and events.

He has been director of the master in “Oceanography and atmospheric sciences” of the university of Salento and coordinator of past PhD programmes “Sciences of Climate Change” and “ecology and Climate Change”. Presently coordinator of the PhD Programme “Biological and Environmental Sciences and Technologies”

List of recent publication in scientific journals

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