

Piero Lionello – Curriculum Vitae

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CAREER

Piero Lionello (born in Venice, Italy, in 1960) obtained a degree in Physics with honors in 1984. From 1987 to 1992 he conducted research at CNR-ISDGM (Italy), MIT (USA), Max Planck Institute for Meteorology (Germany), ECMWF (United Kingdom), and KNMI (The Netherlands). He was subsequently researcher at the Department of Physics of the University of Padua (1992–1999) and associate professor at the University of Salento (1999–2016).

Since February 2016 he has been full professor of Atmospheric Physics and Oceanography at the University of Salento.

In 2024 he received the International Prize for Astronomy, Geodesy and Geophysics of the Accademia Nazionale dei Lincei. He was also awarded the University Seal by the Rector of the University of Salento (2024).

THE MEDCLIVAR SCIENTIFIC NETWORK

From 2003 to March 2025 he promoted and coordinated the scientific network MedCLIVAR (Mediterranean Climate Variability), recognized by CLIVAR-WCRP in 2006.

The MedCLIVAR project was approved and funded as a European Science Foundation (ESF) project during 2006–2011. In 2006 he was elected Chair of the Steering Committee, a role held until March 2025.

The MedCLIVAR-ESF programme (2006–2011) organized 11 international workshops and meetings, 3 schools, and an international exchange programme.

The continuation of the project led to the organization of seven international conferences (Lecce 2011; Madrid 2012; Ankara 2014; Athens 2016; Belgrade 2018; Marrakech 2022; Lecce 2024).

The results of the network are presented in two volumes published by Elsevier: *Mediterranean Climate Variability* and *The Climate of the Mediterranean Region: From the Past to the Future*, and in numerous special issues of international journals.

ROLES IN THE INTERNATIONAL SCIENTIFIC COMMUNITY

Chair of the International Scientific Committee of the HyMeX project (2008–2011).

Member of the HyMeX ICCS for the entire duration of the project.

Member of the ECMWF Scientific Advisory Committee for two terms (2009–2016).

Currently member of the Scientific Committee of the International Center for Climate Change Research in Venice.

Founding member of the Italian Society for Climate Sciences (SISC).

President-elect of SISC (term 2027–2028).

Currently (since December 2024) Coordinator of the MedECC Network (Mediterranean Experts on Climate and Environmental Change).

ROLES IN INTERNATIONAL SCIENTIFIC ASSESSMENTS (IPCC AND MEDECC)

Lead Author of IPCC AR6 (WGII, Chapter 13 Europe and Cross-Chapter Mediterranean).

Member of the WGII Glossary editorial team and Contributing Author of the WGI Atlas of IPCC AR6.

Coordinating Lead Author of the chapter “Drivers” of the First MedECC Assessment Report.

Coordinator of the MedECC Special Report on Coastal Risks in the Mediterranean.

Within MedECC, contributed to the final approval sessions of the Summary for Policymakers in plenary consultations with government representatives.

PROJECTS

Participation as Principal Investigator in numerous European and international projects, including: ECAWOM, STOWASUS02100, CIRCE, WASSERMed, RISES-AM, SOCLIMPACT, CLIMAST, as well as national projects and international initiatives such as WAM, IMILAST, COWCLIP, and MedWet.

SCIENTIFIC ACTIVITY

Bibliometric indicators (December 2025):

- Scopus: 148 publications, 14,108 citations, h-index 49
- Web of Science: 127 documents, 11,198 citations, h-index 44
- Google Scholar: 21,851 citations, h-index 61

He has been continuously included since 2019 in the Stanford/Elsevier list of the World's Top 2% Scientists, with prominent and progressively increasing rankings over time, both in the annual ("single-year impact") and career ("career-long impact") classifications.

EDITORIAL ACTIVITY

Editor or co-editor of three scientific volumes and numerous special issues of international journals. Member of the Editorial Board of *Natural Hazards and Earth System Sciences* and of the Copernicus Ocean State Report.

Has served as Editor and Co-Editor of numerous special issues of international scientific journals, coordinating peer-review and scientific selection processes, including:

- *Global and Planetary Change* – "Mediterranean climate: trends, variability and change"
- *Theoretical and Applied Climatology* – "Synoptic Climatology"
- *Physics and Chemistry of the Earth* – "The Climate of Venetia and Northern Adriatic"
- *Natural Hazards and Earth System Sciences* – "Understanding Dynamics and Current Developments of Extreme Climate in the Mediterranean Region"
- *Regional Environmental Change* – "The climate of the Mediterranean region: research progress and climate change impacts"
- *Natural Hazards and Earth System Sciences* "Climate change, extreme events and hazards in the Mediterranean region"
- *International Journal of Climatology* (IJOC) – "The climate of the Mediterranean region at multiple time and spatial scales."
- *Natural Hazards and Earth System Sciences* – "Venice flooding: understanding, prediction capabilities, and future projections"

ORGANIZATION OF CONFERENCES AND SCHOOLS

Organization of numerous international conferences, meetings, and schools within MedCLIVAR, EGU, EMS-ECA, and IUGG.

From 2003 to 2021 he organized an annual EGU session dedicated to the Mediterranean climate.

TEACHING ACTIVITY AND INSTITUTIONAL RESPONSIBILITIES

Lecturer in MSc programs in Environmental Sciences and Marine and Coastal Biology.

Extensive experience in supervising bachelor, master, and PhD theses.

Coordinator of the PhD program in Biological and Environmental Sciences.

Director of the Master in Oceanography and Atmospheric Sciences (2018–2023).

Director of the Museum of the Environment of the University of Salento since 2018.

PUBLICATIONS (last 5 years)

Hassoun, A.E.R., Mojtabid, M., Merheb, M., Lionello, P., Gattuso, J.-P., Cramer, W.

Climate change risks on key open marine and coastal mediterranean ecosystems
(2025) Scientific Reports, 15 (1), art. no. 24907
DOI: 10.1038/s41598-025-07858-x

Parras-Berrocal, I.M., Waldman, R., Gonzalez, N.M., Ahrens, B., Cabos Narvaez, W., Jorda, G., Lionello, P., Sannino, G., Somot, S.
Regionalized Mediterranean relative sea level projections under high-emission regional climate scenarios
(2025) Environmental Research Letters, 20 (11), art. no. 114068
DOI: 10.1088/1748-9326/ae15a5

Pappaccogli, G., Zonato, A., Martilli, A., Buccolieri, R., Lionello, P.
MLUCM BEP + BEM: an offline one-dimensional multi-layer urban canopy model based on the BEP + BEM scheme
(2025) Geoscientific Model Development, 18 (19), pp. 7129 - 7145
DOI: 10.5194/gmd-18-7129-2025

Jebbad, R., Sierra, J.P., Gironella, X., Möso, C., González-Marco, D., Lionello, P.
Uncertainty in the Assessment of Wave Overtopping in Mediterranean Moroccan Ports Associated with Climate Change
(2025) Journal of Marine Science and Engineering, 13 (10), art. no. 2021
DOI: 10.3390/jmse13102021

Bozzeda, F., Sigovini, M., Lionello, P.
Neural Network Modelling of Temperature and Salinity in the Venice Lagoon
(2025) Climate, 13 (9), art. no. 189
DOI: 10.3390/cli13090189

Jezequel, A., Faranda, D., Drobinski, P., Lionello, P.
Extreme Event Attribution in the Mediterranean
(2025) International Journal of Climatology, 45 (7), art. no. e8799
DOI: 10.1002/joc.8799

Vicente-Serrano, S.M., Trambly, Y., Reig-Gracia, F., González-Hidalgo, J.C., Beguería, S., Brunetti, M., Cindrić, K.C., Patalen, L., Kržič, A., Lionello, P., Lima, M.M., Trigo, R.M., El-Kenawy, A.M., Eddenjal, A., Türkeş, M., Koutroulis, A., Manara, V., Maugeri, M., Badi, W., Mathbout, S., Bertalanich, R., Bocheva, L., Dabanlı, I., Dumitrescu, A., Dubuisson, B., Sahabi-Abed, S., Abdulla, F., Fayad, A., Hodzic, S., Ivanov, M., Radevski, I., Peña-Angulo, D., Lorenzo-Lacruz, J., Dominguez-Castro, F., Gimeno-Sotelo, L., García-Herrera, R., Franquesa, M., Halifa-Marín, A., Adell-Michavila, M., Noguera, I., Barriopedro, D., Garrido-Perez, J.M., Azorin-Molina, C., Andres-Martin, M., Gimeno, L., Nieto, R., Llasat, M.C., Markonis, Y., Selmi, R., Ben Rached, S., Radovanović, S., Soubeyroux, J.-M., Ribes, A., Saidi, M.E., Bataineh, S., El Khalki, E.M., Robaa, S., Boucetta, A., Alsafadi, K., Mamassis, N., Mohammed, S., Fernández-Duque, B., Cheval, S., Moutia, S., Stevkova, A., Stevkova, S., Luna, M.Y., Potopová, V.
High temporal variability not trend dominates Mediterranean precipitation
(2025) Nature, 639 (8055), pp. 658 - 666
DOI: 10.1038/s41586-024-08576-6

Parras-Berrocal, I.M., Waldman, R., Sevault, F., Somot, S., Gonzalez, N.M., Ahrens, B., Anav, A., Djurdjević, V., Gualdi, S., Hamouda, M.E., Li, L., Lionello, P., Sannino, G., Sein, D.V.

Response of the Mediterranean Sea Surface Circulation at Various Global Warming Levels: A Multi-Model Approach

(2024) *Geophysical Research Letters*, 51 (24), art. no. e2024GL111695

DOI: 10.1029/2024GL111695

Pappaccogli, G., Giangrande, F., Esposito, A., Donato, A., Lionello, P., Buccolieri, R.

Dynamics of urban heat island intensity in Lecce, Italy: seasonal, diurnal and heat wave influence

(2024) *Bulletin of Atmospheric Science and Technology*, 5 (1), art. no. 8

DOI: 10.1007/s42865-024-00072-z

Lionello, P., D'Agostino, R., Ferreira, D., Nguyen, H., Singh, M.S.

The Hadley circulation in a changing climate

(2024) *Annals of the New York Academy of Sciences*, 1534 (1), pp. 69 - 93

DOI: 10.1111/nyas.15114

Causio, S., Federico, I., Jansen, E., Mentaschi, L., Ciliberti, S.A., Coppini, G., Lionello, P.

The Black Sea near-past wave climate and its variability: a hindcast study

(2024) *Frontiers in Marine Science*, 11, art. no. 1406855

DOI: 10.3389/fmars.2024.1406855

Ferrarin, C., Orlic, M., Bajo, M., Davolio, S., Umgiesser, G., Lionello, P.

The contribution of a mesoscale cyclone and associated meteotsunami to the exceptional flood in Venice on November 12, 2019

(2023) *Quarterly Journal of the Royal Meteorological Society*, 149 (756), pp. 2929 - 2942

DOI: 10.1002/qj.4539

Flaounas, E., Aragão, L., Bernini, L., Dafis, S., Doiteau, B., Flocas, H., Gray, S.L., Karwat, A., Kouroutzoglou, J., Lionello, P., Miglietta, M.M., Pantillon, F., Pasquero, C., Patlakas, P., Picornell, M.Á., Porcù, F., Priestley, M.D.K., Reale, M., Roberts, M.J., Saaroni, H., Sandler, D., Scoccimarro, E., Sprenger, M., Ziv, B.

A composite approach to produce reference datasets for extratropical cyclone tracks: application to Mediterranean cyclones

(2023) *Weather and Climate Dynamics*, 4 (3), pp. 639 - 661

DOI: 10.5194/wcd-4-639-2023

Ingrosso, R., Lionello, P., Miglietta, M.M., Salvadori, G.

Brief communication: Towards a universal formula for the probability of tornadoes

(2023) *Natural Hazards and Earth System Sciences*, 23 (7), pp. 2443 - 2448

DOI: 10.5194/nhess-23-2443-2023

Zittis, G., Ahrens, B., Obermann-Hellhund, A., Giannakis, E., Risto, D., Agulles Gamez, M., Jorda, G., Quesada Peña, M., Lora Rodríguez, V., Guersi Sauret, J.L., Lionello, P., Briche, E., Collignan, J., Grätz, M., Arikas, D., Stylianou, C., Neophytou, H., Serghides, D.

Maritime transport and regional climate change impacts in large EU islands and archipelagos

(2023) *Euro-Mediterranean Journal for Environmental Integration*, 8 (2), pp. 441 - 454

DOI: 10.1007/s41207-023-00370-6

Kotsias, G., Lolis, C.J., Hatzianastassiou, N., Bakas, N., Lionello, P., Bartzokas, A.

Objective climatology and classification of the Mediterranean cyclones based on the ERA5 data set and the use of the results for the definition of seasons

(2023) *Theoretical and Applied Climatology*, 152 (1-2), pp. 581 - 597

DOI: 10.1007/s00704-023-04374-8

Carnicer, J., Alegría, A., Giannakopoulos, C., Di Giuseppe, F., Karali, A., Koutsias, N., Lionello, P., Parrington, M., Vitolo, C.

Global warming is shifting the relationships between fire weather and realized fire-induced CO₂ emissions in Europe

(2022) Scientific Reports, 12 (1), art. no. 10365

DOI: 10.1038/s41598-022-14480-8

Ferrarin, C., Lionello, P., Orlic, M., Raichich, F., Salvadori, G.

Venice as a paradigm of coastal flooding under multiple compound drivers

(2022) Scientific Reports, 12 (1), art. no. 5754

DOI: 10.1038/s41598-022-09652-5

Reale, M., Cabos Narvaez, W., Cavicchia, L., Conte, D., Coppola, E., Flaounas, E., Giorgi, F., Gualdi, S., Hochman, A., Li, L., Lionello, P., Podraščanin, Z., Salon, S., Sánchez-Gómez, E., Scoccimarro, E., Sein, D.V., Somot, S.

Future projections of Mediterranean cyclone characteristics using the Med-CORDEX ensemble of coupled regional climate system models

(2022) Climate Dynamics, 58 (9-10), pp. 2501 - 2524

DOI: 10.1007/s00382-021-06018-x

Kotsias, G., Lolis, C.J., Hatzianastassiou, N., Lionello, P., Bartzokas, A.

A comparison of different approaches for the definition of seasons in the Mediterranean region

(2022) International Journal of Climatology, 42 (3), pp. 1954 - 1974

DOI: 10.1002/joc.7345

Chiggiato, J., Schroeder, K., Mourre, B., Miramontes, E., Lionello, P., Marcos, M., Pinardi, N., Mason, E., Álvarez, M., Trincardi, F.

Introduction

(2022) Oceanography of the Mediterranean Sea: An Introductory Guide, pp. 1 - 11

DOI: 10.1016/B978-0-12-823692-5.00002-9

Lionello, P., Sannino, G., Vilibić, I.

Surface wave and sea surface dynamics in the Mediterranean

(2022) Oceanography of the Mediterranean Sea: An Introductory Guide, pp. 161 - 207

DOI: 10.1016/B978-0-12-823692-5.00007-8

Lionello, P., Giorgi, F., Rohling, E., Seager, R.

Mediterranean climate

(2022) Oceanography of the Mediterranean Sea: An Introductory Guide, pp. 41 - 91

DOI: 10.1016/B978-0-12-823692-5.00011-X

Diez-Sierra, J., Iturbide, M., Gutiérrez, J.M., Fernández, J., Milovac, J., Cofiño, A.S., Cimadevilla, E., Nikulin, G., Levvasseur, G., Kjellström, E., Bülow, K., Horányi, A., Brookshaw, A., García-Díe, M., Pérez, A., Baño-Medín, J., Ahrens, B., Alias, A., Ashfaq, M., Bukovsky, M., Buonomo, E., Caluwaerts, S., Chou, S.C., Christensen, O.B., Ciarlò, J.M., Coppola, E., Corre, L., Demory, M.-E., Djurdjević, V., Evans, J.P., Fealy, R., Feldmann, H., Jacob, D., Sanjay, S., Katzfey, J., Keuler, K., Kittel, C., Kurnaz, M.L., Laprise, R., Lionello, P., McGinnis, S., Mercogliano, P., Nabat, P., Önal, B., Öztürk, T., Panitz, H.-J., Paquin, D., Pieczka, I., Raffaele, F., Remedio, A.R., Scinocca, J., Sevault, F., Somot, S., Steger, C., Tangang, F., Teichmann, C., Termonia, P.,

Thatcher, M., Zsolt Torma, C., van Meijgaard, E., Robert Vautard, Kirsten Warrach-Sagi, Winger, K., Zittis, G.

The Worldwide C3S CORDEX Grand Ensemble A Major Contribution to Assess Regional Climate Change in the IPCC AR6 Atlas

(2022) Bulletin of the American Meteorological Society, 103 (12), pp. E2804 - E2826

DOI: 10.1175/BAMS-D-22-0111.1

<https://www.scopus.com/inward/record.uri?eid=2-s2.0-85146151036&doi=10.1175%2FBAMS-D-22-0111.1&partnerID=40&md5=84c6a7f32ec1b4e9dab0f58dbed0ea60>

Agulles, M., Jorda, G., Lionello, P.

Flooding of Sandy Beaches in a Changing Climate. The Case of the Balearic Islands (NW Mediterranean)

(2021) Frontiers in Marine Science, 8, art. no. 760725

DOI: 10.3389/fmars.2021.760725

Umgiesser, G., Bajo, M., Ferrarin, C., Cucco, A., Lionello, P., Zanchettin, D., Papa, A., Tosoni, A., Ferla, M., Coraci, E., Morucci, S., Crosato, F., Bonometto, A., Valentini, A., Orlic, M., Haigh, I.D., Nielsen, J.W., Bertin, X., Fortunato, A.B., Pérez Gómez, B., Álvarez-Fanjul, E., Paradis, D., Jourdan, D., Pasquet, A., Mourre, B., Tintoré, J., Nicholls, R.J.

The prediction of floods in Venice: Methods, models and uncertainty (review article)

(2021) Natural Hazards and Earth System Sciences, 21 (8), pp. 2679 - 2704

DOI: 10.5194/nhess-21-2679-2021

<https://www.scopus.com/inward/record.uri?eid=2-s2.0-85114370589&doi=10.5194%2Fnhess-21-2679-2021&partnerID=40&md5=6e7b3036e2b2163c5bd793580f9880d0>

Lionello, P., Nicholls, R.J., Umgiesser, G., Zanchettin, D.

Venice flooding and sea level: Past evolution, present issues, and future projections (introduction to the special issue)

(2021) Natural Hazards and Earth System Sciences, 21 (8), pp. 2633 - 2641

DOI: 10.5194/nhess-21-2633-2021

Zanchettin, D., Bruni, S., Raicich, F., Lionello, P., Adloff, F., Androsov, A., Antonioli, F., Artale, V., Carminati, E., Ferrarin, C., Sidorenko, V., Nicholls, R.J., Rubineti, S., Rubino, A., Sannino, G., Spada, G., Thiéblemont, R., Tsimplis, M., Umgiesser, G., Vignudelli, S., Wöppelmann, G., Zerbini, S.

Sea-level rise in Venice: Historic and future trends (review article)

(2021) Natural Hazards and Earth System Sciences, 21 (8), pp. 2643 - 2678

DOI: 10.5194/nhess-21-2643-2021

Lionello, P., Barriopedro, D., Ferrarin, C., Nicholls, R.J., Orlic, M., Raicich, F., Reale, M., Umgiesser, G., Voursdoukas, M., Zanchettin, D.

Extreme floods of Venice: Characteristics, dynamics, past and future evolution (review article)

(2021) Natural Hazards and Earth System Sciences, 21 (8), pp. 2705 - 2731

DOI: 10.5194/nhess-21-2705-2021

Ferrarin, C., Bajo, M., Benetazzo, A., Cavaleri, L., Chiggiato, J., Davison, S., Davolio, S., Lionello, P., Orlic, M., Umgiesser, G.

Local and large-scale controls of the exceptional Venice floods of November 2019

(2021) Progress in Oceanography, 197, art. no. 102628

DOI: 10.1016/j.pocean.2021.102628

Causio, S., Ciliberti, S.A., Clementi, E., Coppini, G., Lionello, P.
A modelling approach for the assessment of wave-currents interaction in the black sea
(2021) Journal of Marine Science and Engineering, 9 (8), art. no. 893
DOI: 10.3390/jmse9080893

Lionello, P., Belmonte, G., Pollice, F., Ruggiero, L.
THE MUSEUM OF NATURAL ENVIRONMENT OF THE UNIVERSITY OF SALENTO:
HISTORY, COLLECTION, MISSION IL MUSEO DELL'AMBIENTE DELL'UNIVERSITÀ
DEL SALENTO: STORIA, CONTENUTI, MISSIONE
(2021) Annali di Storia delle Università Italiane, 25 (1), pp. 187 - 197
DOI: 10.17396/100962

Kotsias, G., Lolis, C.J., Hatzianastassiou, N., Lionello, P., Bartzokas, A.
An objective definition of seasons for the Mediterranean region
(2021) International Journal of Climatology, 41 (S1), pp. E1889 - E1905
DOI: 10.1002/joc.6819