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JONATHAN SPINONI, PhD

PROFILE Climate scientist with 16 years of experience, in particular on drought, desertification, and climate extremes. Current research on deep uncertainties in climate and socio-economic scenarios. Contributing author for IPCC-AR6 report.

MAIN SKILLS Research planning and management, data analysis and modelling, scientific writing.
IT – Experienced programmer (R, python, Fortran, C, GIS) on large climatic datasets
Languages – Italian (C2), English (C2), French (B2)

WORK EXPERIENCE

Polytechnic University of Milan

Department of Management, Economics and Industrial Engineering (Milan, IT)

Research Fellow (May 2023 – present)

Research on deep uncertainties in climate and socio-economic scenarios (ERC EUNICE)

RFF-CMCC – EIEE (Milan, IT)

Affiliated Scientist (May 2023 – present)

Climate extremes, modelling, and scenarios

European Commission – DG JRC (Ispra, IT)

Researcher (May 2017 – Apr 2023)

Global past and projected drought and desertification risk

Data Scientist Consultant (GFT Srl Italy ; Jan 2015 – April 2017)

Copernicus EMS and vegetation ecosystems

Post-doc Grant-holder (Nov 2011 – Oct 2014)

Drought in Europe and climate extremes in the Carpathian Region

University of Milan – Physics Department (Milan, IT)

Post-doc Research Fellow (Apr – Oct 2011)

Solar radiation modelling for Italy

PhD Student (Nov 2007 – Dec 2010)

Historical climate reconstruction for Italy and Central Europe

Junior Research Fellow (May – July 2007 and Sep – Oct 2007)

Temperature and precipitation secular records over Italy and the Alps

EDUCATION

University of Milan – Physics Department (Milan, IT)

PhD (Physics) – Doctorate School in Physics, Astrophysics, and Applied Physics

Nov 2007 – Dec 2010 ; Climate Physics

Master Degree in Atmospheric Physics

Mar 2005 – Apr 2007 ; 110/110 with honors

Bachelor Degree in applied Physics

Sep 2001 – Feb 2005 ; 110/110

CURRENT RESEARCH

Deep uncertainties in climate and socio-economic scenarios

Historical and projected climate extremes and impacts

Global population and land-use exposure to heat-waves, drought, and desertification

Main Projects – EUNICE (ERC), TRACE, CORDEX-CMIP6 (modelling community)

SCIENTIFIC PAPERS (Scopus H-index: 22)

Cammalleri C, Acosta Navarro JC, Bavera D, Diaz V, Di Ciollo, C, Maetens W, Magni D, Masante D, [Spinoni J](#), Toreti A. (2023). **An event-oriented database of meteorological droughts in Europe based on spatio-temporal clustering.** *Scientific Reports* 13 (1), 3145.

Dosio A, Lennard C, [Spinoni J](#). (2022). **Projections of indices of daily temperature and precipitation based on bias-adjusted CORDEX-Africa regional climate model simulations.** *Climatic Change* 170 (1-2), 13.

Cammalleri C, [Spinoni J](#), Barbosa P, Toreti A, Vogt JV. (2022). **The effects of non-stationarity on SPI for operational drought monitoring in Europe.** *International Journal of Climatology* 42 (6), 3418-3430.

[Spinoni J](#), Barbosa P, Füssel HM, McCormick N, Vogt JV, Dosio A (2021). **Global population-weighted degree-day projections for a combination of climate and socio-economic scenarios.** *International Journal of Climatology* 41 (11), 5447-5464.

[Spinoni J](#), Barbosa, P, Cherlet M, Forzieri G, McCormick N, Naumann G, Vogt JV, Dosio A. (2021). **How will the progressive global increase of arid areas affect population and land-use in the 21st century?** *Global and Planetary Change* 205, 103597,2021.

[Spinoni J](#), Barbosa P, Bucchignani E, Cassano J, Cavazos T, Cescatti A, Christensen, JH, Christensen OB, Coppola E, Evans JP, Forzieri G, Geyer B, Giorgi F, Jacob D, Katzfey J, Koenigk T, Laprise R, Lennard CJ, Kurnaz L, Li D, Llopart M, McCormick N, Naumann G, Nikulin G, Ozturk T, Panitz HJ, da Rocha RP, Solman SA, Syktus J, Tangang F, Teichmann C, Vautard R, Vogt JV, Winger K, Zittis G, Dosio A. (2021). **Global exposure of population and land-use to meteorological droughts under different warming levels and SSPs: a CORDEX-based study.** *International Journal of Climatology* 41(15), 6825-6853.

Forzieri G, Girardello M, Ceccherini G, [Spinoni J](#), Feyen L, Hartmann H, Beck PSA, Camps-Valls G, Chirici G, Mauri A, Cescatti A. (2021). **Emergent vulnerability to climate-driven disturbances in European forests.** *Nature Communications* 12 (1), 1081.

Cammalleri C, Arias-Muñoz C, Barbosa P, De Jager A, Magni D, Masante D, Mazzeschi M, McCormick N, Naumann G, [Spinoni J](#). (2021). **A revision of the Combined Drought Indicator (CDI) used in the European Drought Observatory (EDO).** *Natural Hazards and Earth System Sciences* 21 (2), 481-495.

Forzieri G, Pecchi M, Girardello M, Mauri A, Klaus M, Nikolov C, Rüetschi M, Gardiner B, Tomaščík J, Small D, Nistor C, Jonikavicius D, [Spinoni J](#), Feyen L, Giannetti F, Comino R, Wolynski A, Pirotti F, Maistrelli F, Savulescu I, Wurpillot-Lucas S, Karlsson S, Zieba-Kulawik K, Strejczek-Jazwinska P, Mokros M, Franz S,

Krejci L, Haidu L, Nilsson M, Wezyk P, Catani f, Chen YY, Luysaert S, Chirici G, Cescatti A, Beck PSA. (2020). **A spatially explicit database of wind disturbances in European forests over the period 2000–2018.** *Earth System Science Data* 12 (1), 257-276.

Spinoni J, Barbosa P, Bucchignani E, Cassano J, Cavazos T, Christensen, JH, Christensen OB, Coppola E, Evans JP, Geyer B, Giorgi F, Hadjinicolau P, Jacob D, Katzfey J, Koenigk T, Laprise R, Lennard CJ, Kurnaz L, Li D, Llopart M, McCormick N, Naumann G, Nikulin G, Ozturk T, Panitz HJ, da Rocha RP, Rockel, B, Solman SA, Syktus J, Tangang F, Teichmann C, Vautard R, Vogt JV, Winger K, Zittis G, Dosio A. (2020). **Future global meteorological drought hot spots: A study based on CORDEX data.** *Journal of Climate* 33 (9), 3635-3661.

Spinoni J, Barbosa P, De Jager A, McCormick N, Naumann G, Vogt JV, Magni D, Masante D, Mazzeschi M. (2019). **A new global database of meteorological drought events from 1951 to 2016.** *Journal of Hydrology: Regional Studies* 22, 100593.

Naumann G, Vargas WM, Barbosa P, Blauhut V, Spinoni J, Vogt JV. (2019). **Dynamics of socioeconomic exposure, vulnerability and impacts of recent droughts in Argentina.** *Geosciences* 9 (1), 39.

Naumann G, Alfieri L, Wyser K, Mentaschi L, Betts RA, Carrao H; Spinoni J, Vogt JV, Feyen, L. (2018). **Global changes in drought conditions under different levels of warming.** *Geophysical Research Letters* 45 (7), 3285-3296.

Spinoni J, Vogt JV, Barbosa P, Dosio A, McCormick N, Bigano A, Füßel HM. (2018). **Changes of heating and cooling degree-days in Europe from 1981 to 2100.** *International Journal of Climatology* 38 (S1), e191-e208.

Spinoni J, Vogt JV, Naumann G, Barbosa P, Dosio A. (2018). **Will drought events become more frequent and severe in Europe?** *International Journal of Climatology* 38 (4), 1718-1736.

Panagos P, Ballabio C, Meusburger K, Spinoni J, Alewell C, Borrelli P. (2017). **Towards estimates of future rainfall erosivity in Europe based on REDES and WorldClim datasets.** *Journal of Hydrology* 548, 251-262.

Ballabio C, Borrelli P, Spinoni J, Meusburger K, Michaelides S, Beguería S, Klik A, Petan S, Janeček M, Olsen P, Aalto J, Lakatos M, Rymaszewicz A, Dumitrescu A, Percec Tadic M, Diodato N, Kostalova J, Rousseva S, Banasik K, Alewell C, Panagos P. (2017). **Mapping monthly rainfall erosivity in Europe.** *Science of the Total Environment* 579, 1298-1315.

Spinoni J, Naumann G, Vogt JV. (2017). **Pan-European seasonal trends and recent changes of drought frequency and severity.** *Global and Planetary Change* 148, 113-130.

Lakatos M, Bihari Z, Szentimrey T, Spinoni J, Szalai S. (2016). **Analyses of temperature extremes in the Carpathian Region in the period 1961–2010.** *Időjárás* 120 (1), 41-51.

Panagos P, Borrelli P, Spinoni J, Ballabio C, Meusburger K, Beguería S, Klik A, Michaelides S, Petan S, Hrabalíková M, Olsen P, Aalto J, Lakatos M, Rymaszewicz A, Dumitrescu A, Percec Tadic M, Diodato N, Kostalova J, Rousseva S, Banasik K, Alewell C. (2016). **Monthly rainfall erosivity: conversion factors for different time resolutions and regional assessments.** *Water* 8 (4), 119.

Naumann G, Spinoni J, Vogt JV, Barbosa P. (2015). **Assessment of drought damages and their uncertainties in Europe.** *Environmental Research Letters* 10 (12), 124013.

Spinoni J, Naumann G, Vogt JV. (2015). **Spatial patterns of European droughts under a moderate emission scenario.** *Advances in Science and Research* 12 (1), 179-186.

Spinoni J, Naumann G, Vogt JV, Barbosa Paulo. (2015). **The biggest drought events in Europe from 1950 to 2012.** *Journal of Hydrology: Regional Studies* 3, 509-524.

Spinoni J, Lakatos M, Szentimrey T, Bihari Z, Szalai S, Vogt JV, Antofie Tiberiu. (2015). **Heat and cold waves trends in the Carpathian Region from 1961 to 2010**. *International Journal of Climatology* 35 (14), 4197-4209.

Spinoni J, Naumann Gustavo, Vogt JV, Barbosa P. (2015). **European drought climatologies and trends based on a multi-indicator approach**. *Global and Planetary Change* 127, 50-57.

Antofie, T, Naumann G, Spinoni J; Vogt JV. (2015). **Estimating the water needed to end the drought or reduce the drought severity in the Carpathian region**. *Hydrology and Earth System Sciences* 19 (1), 177-193.

Spinoni J, Vogt JV, Naumann G, Carrao H, Barbosa P. (2015). **Towards identifying areas at climatological risk of desertification using the Köppen-Geiger classification and FAO aridity index**. *International Journal of Climatology* 35 (9), 2210-2222.

Spinoni J, Szalai S, Szentimrey T, Lakatos M, Bihari Z, Nagy A, Németh Á, Kovács T, Mihic D, Dacic M, Petrovic P, Krzic A, Hiebl J, Auer I, Milkovic J, Stepanek P, Zahradnicek P, Kilar P, Limanowka D, Pyrc R, Cheval S, Birsan MV, Dumitrescu A, Deak G, Matei M, Antolovic I, Nejedlik P, Stastny P, Kajaba P, Bochnicek O, Galo D, Mikulova K, Nabyvanets Y, Skrynyk O, Krakovska S, Gnatiuk N, Tolasz R, Antofie T, Vogt JV. (2015). **Climate of the Carpathian Region in the period 1961–2010: climatologies and trends of 10 variables**. *International Journal of Climatology* 35 (7), 1322-1341.

Spinoni J, Vogt JV, Barbosa P. (2014). **European degree-day climatologies and trends for the period 1951–2011**. *International Journal of Climatology* 35 (1), 25-36.

Spinoni J, Naumann G, Carrao H, Barbosa P, Vogt JV. (2013). **World drought frequency, duration, and severity for 1951–2010**. *International Journal of Climatology* 34 (8), 2792-2804.

Brunetti M, Maugeri M, Nanni T, Simolo C, Spinoni J. (2014). **High-resolution temperature climatology for Italy: interpolation method intercomparison**. *International Journal of Climatology* 34 (4), 1278-1296.

Spinoni J, Antofie T, Barbosa P, Bihari Z, Lakatos M, Szalai S, Szentimrey T, Vogt JV. (2013). **An overview of drought events in the Carpathian Region in 1961–2010**. *Advances in Science and Research* 10 (1) 21-32.

Brunetti M, Lentini G, Maugeri M, Nanni T, Simolo C, Spinoni J. (2012). **Projecting North Eastern Italy temperature and precipitation secular records onto a high-resolution grid**. *Physics and Chemistry of the Earth A/B/C* (40), 9-22.

Brunetti M, Lentini G, Maugeri M, Nanni T, Simolo C, Spinoni J. (2009). **1961–1990 high-resolution Northern and Central Italy monthly precipitation climatologies**. *Advances in Science and Research* 3 (1), 73-78.

Brunetti M, Lentini G, Maugeri M, Nanni T, Simolo C, Spinoni J. (2009). **Estimating local records for Northern and Central Italy from a sparse secular temperature network and from 1961–1990 climatologies**. *Advances in Science and Research* 3 (1), 63-71.

Hiebl J, Auer I, Bohm R; Schöner W, Maugeri M, Lentini G, Spinoni J, Brunetti M, Nanni T, Percec Tadic M. (2009). **A high-resolution 1961-1990 monthly temperature climatology for the greater Alpine region**. *Meteorologische Zeitschrift* 18 (5), 507.

OTHER RELEVANT
PUBLICATIONS

European State of Climate 2022 (Contributing author) - Copernicus Climate Change Service (C3S). (2023). **European State of the Climate 2022, Full report**: climate.copernicus.eu/ESOTC/2022.

IPCC-AR6 WGI Report (Contributing author) - Seneviratne S, Zhang X, [...]. (2021). **IPCC-AR6 WGI - Chapter 11: Weather and climate extreme events in a changing climate..** In: *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte V et al. (eds)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 33–144.*

Erian W, [...], Spinoni J, [...]. (2021). **GAR special report on drought 2021.** *United Nations Office for Disaster Risk Reduction (UNDRR) Publications, Geneva (CH).*

Feyen L, [...], Spinoni J, [...]. (2020). **Climate change impacts and adaptation in Europe. JRC PESETA IV Final Report.** *Publications Office of the European Union, Luxembourg (LX), JRC119178.*

WAD (3rd edition) (Contributing author) - Cherlet, M., Hutchinson, C., Reynolds, J., Hill, J., Sommer, S., von Maltitz, G. (Eds.). (2018). **World Atlas of Desertification (3rd ed).** *Publication Office of the European Union, Luxembourg.*

EEA Annual Report on Climate 2016. (Contributing author) – European Environmental Agency (EEA). (2017). **Climate change, impacts and vulnerability in Europe 2016. An indicator-based report.** *EEAReport No 1/2017, Copenhagen (DK), ISBN: 978-92-9213-835-6.*

Spinoni J, et al. (2016). **Meteorological droughts in Europe: events and impacts, past trends and future projections.** *Publications Office of the European Union, Luxembourg (LX).*

OTHER PUBLICATIONS

Naumann G, [...], Spinoni J, [...]. (2023). **Extreme and long-term drought in the La Plata Basin: event evolution and impact assessment until September 2022.** *Publications Office of the European Union, Luxembourg, doi:10.2760/62557.*

Toreti A, [...], Spinoni J, [...]. (2022). **Drought in Europe July 2022.** *EUR 31147 EN, Publications Office of the European Union, Luxembourg.*

Maes J, [...], Spinoni J, [...]. (2020). **Mapping and assessment of ecosystems and their services: An EU wide ecosystem assessment in support of the EU biodiversity strategy.** *Publications Office of the European Union, Luxembourg (LX).*

Karagiannis G., [...], Spinoni J, [...]. (2019). **Climate change and critical infrastructure–storms.** *Publications Office of the European Union, Luxembourg (LX).*

Vogt JV, [...], Spinoni J, [...]. (2018). **Drought risk assessment and management: A conceptual framework.** *Publications Office of the European Union, Luxembourg (LX).*

Szalai S, [...], Spinoni J, and the CARPATCLIM Team. (2013). **Climate of the Greater Carpathian Region. Final Technical report.** Available at: <http://www.carpatclim-eu.org/>.

AWARDS

International Journal of Climatology Award 2016 (Best Author)
JRC Excellence Award 2021 (Science for Policy)