Katinka Bellomo

Website · Google Scholar · ORCID

Date of birth: 29/04/1986
Nationality: Italian
Phone: +39 375 542 5225
e-mail: katinka.bellomo@polito.it

Education

Ph.D., Meteorology and Physical Oceanography, 2015
University of Miami, Rosenstiel School of Marine and Atmospheric Science, Miami, FL, USA

M.S., Physics, 2010
Università degli studi di Torino, Turin, Italy

B.S., Physics, 2008
Università degli studi di Torino, Turin, Italy

Employment

Parental leaves: (Jan to Apr 2016; Feb to May 2019 and Jul to Dec 2019)

06/2021 - present: Research scientist, Marie Sklodowska-Curie Individual Fellowship
Polytechnic University of Turin, Department of Environment, Land and Infrastructure, Turin, Italy

12/2019 - 05/2021: Senior postdoctoral research scientist
National Research Council of Italy, Institute of Atmospheric Sciences and Climate, Turin, Italy

04/2018 - 06/2019: Data scientist
Foursquare, New York, NY, USA

09/2015 - 01/2018: Postdoctoral research scientist
Columbia University, Lamont Doherty Earth Observatory, Palisades, NY, USA

03/2013 - 04/2013: Oceanographic cruise (Clivar A20, P02 Leg1 Yokohama-Honolulu)
Scripps Institution of Oceanography, UC San Diego, La Jolla, CA, USA

09/2010 - 08/2015: Graduate research assistant
University of Miami, Rosenstiel School of Marine and Atmospheric Science, Miami, FL, USA

Funded proposals

2021 - 2023: Marie Sklodowska-Curie Individual Fellowship, project: CliMOC ("Climate Impacts of the Atlantic Meridional Overturning Circulation"), €183,473.28

2021 - 2023: ECMWF Special project, project: 'Impacts of AMOC decline on European climate', HPC resources

2015 - 2017: Lamont-Doherty postdoctoral fellowship, Columbia University, project: "Model experiments and observations to investigate mechanisms of Atlantic Multidecadal Variability", $129,000

2014: Career development fund, Rosenstiel School of Marine and Atmospheric Sciences, project: 'Post-graduate career skills development workshop', $1,000

2012: Alumni fellowship, Rosenstiel School of Marine and Atmospheric Sciences & Max Planck Institute for Meteorology, project: "Predictability of tropical sea surface temperature anomalies on decadal timescales", $4,000 and HPC resources

Awards

2013: Best student publication, Meteorology and Physical Oceanography Division. Awarded by Rosenstiel School of Marine and Atmospheric Sciences, University of Miami.

2012: First place in poster presentation competition, AMS Annual Meeting. Awarded by the American Meteorological Society.

2010: Best M.S. thesis, Environmental Physics track. Awarded by Università degli studi di Torino.

Teaching activities

09/2022 - 02/2023: Teaching assistant at Polytechnic University of Turin for undergraduate level course “The climate system”, Turin, Italy

03/2022 - 06/2022: Tutor at Polytechnic University for undergraduate level course “Evidenze, Modelli e Percezioni del Cambiamento Climatico”, Turin, Italy

2020: Guest lecturer (remote) at North Carolina State University for graduate level course: “Climate Dynamics” taught by Dr. Carli Arendt

05/2013 - 08/2013: Mentor, summer internship of two high school students from MAST Academy, University of Miami, Miami, FL, USA

09/2012 - 05/2013: Teaching assistant for 3 undergraduate level courses (“Atmospheric Thermodynamics”, “Physical Oceanography”, “Global Climate Change”), University of Miami, Miami, FL, USA

Organization of scientific meetings

2023 (upcoming): Short Course chair at EGU General Assembly, Vienna, Astria.

2017: Session chair, AGU Fall Meeting “Climate Variability and Ocean-Atmosphere Interaction over the North Atlantic”, New Orleans, LA, USA

2016: Session chair, AGU Fall Meeting “Beyond the Interannual: Multidecadal and Centennial Modes of Climate Variability”, San Francisco, CA, USA

Institutional responsibilities

Ph.D. students main advisor: Andrea Vacca (Polytechnic University of Turin and IUSS Pavia), starting in December 2022.

Ph.D. students co-advised: Oliver Mehling (Polytechnic University of Turin, 2021-present)

Graduate students (M.S. level) co-advised (Polytechnic University of Turin): Giada Cerato (2022), Matteo Migone (ongoing)

2021 - 2023: Committee member of the Outreach Committee of the European Geosciences Union

2014 - 2015: Co-founder of the Student Led Evaluation and Development committee at the Rosenstiel School of Marine and Atmospheric Sciences, Miami, FL, USA

2013 - 2014: Committee member of the Diversity Equity Inclusion (DEI) committee at the Rosenstiel School of Marine and Atmospheric Sciences, Miami, FL, USA

2012 - 2014: Student representative of the Meteorology and Physical Oceanography division, Rosenstiel School of Marine and Atmospheric Sciences, Miami, FL, USA

Reviewing activities

2020 - present: Review board, National Science Foundation, Division of Atmospheric and Geospace, Sciences, USA

Membership of scientific societies

2010 - present: Member, European Geosciences Union (EGU), American Geophysical Union (AGU), and American Meteorological Society (AMS)

Publications

In prep./Submitted:

Fabiano F., and **Coauthors**: Long-term climate response in a set of abrupt stabilization scenarios with EC-Earth3. *In prep*.

Jackson L., E. Alastrue-De-Asenjo, **K. Bellomo**, G. Danabasoglu, A. Hu, J. Jungclaus, V. Meccia, O. Saenko, A. Shao, and D. Swingedouw: AMOC thresholds in CMIP6 models: NAHosMIP. *In prep*.

Bellomo K., V. Meccia, F. Fabiano, R. D'Agostino, J. von Hardenberg, and S. Corti: Impacts of a weakened AMOC on precipitation over the Euro-Atlantic sector in the EC-Earth3 climate model. *Submitted to Climate Dynamics*.

Larson, S. M., K. McMonigal, Y. Okumura, D. Amaya, A. Capotondi, **K. Bellomo**, I. Simpson, and A. Clement: Ocean realism shapes sea surface temperature mean state and variability in a CESM2 coupled model hierarchy *Submitted to JAMES.*

Mehling O., **K. Bellomo**, M. Angeloni, C. Pasquero, J. von Hardenberg: High-latitude precipitation as a driver of multicentennial variability of the AMOC. *Submitted to Climate Dynamics.*

Published (total: 17, first author: 7, h-index: 13):

[17] Meccia V., R. Fuentes-Franco, P. Davini, **K.Bellomo**, F. Fabiano, S. Yang, and J. von Hardenberg, 20222: Internal multi-centennial variability of the Atlantic Meridional Overturning Circulation simulated by EC-Earth3. *Climate Dynamics https://doi.org/10.1007/s00382-022-06534-4.*

[16] Larson S., Y. Okumura, **K. Bellomo**, and M. Breeden, 2022: Destructive Interference of ENSO on North Pacific SST and North American Precipitation Associated with Aleutian Low Variability, Journal of Climate, 35(11), 3567-3585.

[15] **Bellomo K.**, M. Angeloni, S. Corti, and J. von Hardenberg, 2021: Future climate change scenarios shaped by inter-model differences in Atlantic Meridional Overturning Circulation response. *Nature Communications* 12, 3659.

[14] Polvani L.M. and **K. Bellomo**, 2019: The key role of ozone depleting substances in weakening the Walker circulation in the second half of the 20th century, *J. Climate*, 32, 1411-1418.

[13] **Bellomo K.**, L. N. Murphy, M. A. Cane, A. C. Clement, L. M. Polvani, 2018: Historical forcings as main drivers of the Atlantic Multidecadal Oscillation in the CESM Large Ensemble. *Climate Dynamics,* 50 (9-10), 3687-3698.

[12] Cane M. A., A. C. Clement, L. N. Murphy, and **K. Bellomo**, 2017: Low-pass filtering, heat flux and the Atlantic Multidecadal Variability, *J. Climate*, 30 (18), 7529-7553.

[11] Murphy L., **K. Bellomo**, M. A. Cane, A. C. Clement, 2017: The Role of Historical Forcings in Simulating the Atlantic Multidecadal Oscillation, *Geophys. Res. Lett.*, 44 (5), 2472-2480.

[10] **Bellomo K.**, A. Clement, L. Murphy, L. Polvani, M. Cane, 2016: New Observational Evidence for Cloud Feedbacks Amplifying the Atlantic Multidecadal Oscillation. *Geophys. Res. Lett*, 43 (18), 9852-9859.

[9] Zuidema P., and **Coauthors**, 2016: Challenges and Prospects for Reducing Coupled Climate Model Biases in the Eastern Tropical Atlantic and Pacific Oceans: the US Clivar Eastern Tropical Oceans Synthesis Working Group. *Bull. Am. Met. Soc.*, 97 (12), 2305-2328.

[8] Clement A. C., M. A. Cane, L. N. Murphy, **K. Bellomo**, T. Mauritsen, B. Stevens, 2016: Response to Comment on "The Atlantic Multidecadal Oscillation without a role for ocean circulation". *Science*, 352, 1527.

[7] Radel G., T. Mauritsen, B. Stevens, D. Dommenget, D. Matei, **K. Bellomo**, and A. C. Clement, 2016: Amplification of El Nino by Cloud Longwave Coupling to Atmospheric Circulation. *Nature Geoscience*, 9(2), 106-110.

[6] Clement A.C., **K. Bellomo**, L. Murphy, M. Cane, T. Mauritsen, G. Radel, and B. Stevens, 2015: The Atlantic Multidecadal Oscillation without a Role for Ocean Circulation. *Science,* 350, 320-324.

[5] **Bellomo K.** and A.C. Clement, 2015: Evidence for Weakening of the Walker Circulation from Cloud Observations. *Geophys. Res. Lett.*, 42 (18), 7758-7766.

[4] **Bellomo K.**, A.C. Clement, T. Mauritsen, G. Radel, and B. Stevens, 2015: The Influence of Cloud Feedbacks on Equatorial Atlantic Variability. *J. Climate*, 28, 2725-2744.

[3] **Bellomo K.**, A.C. Clement, T. Mauritsen, G. Radel, and B. Stevens, 2014: Simulating the Role of Subtropical Stratocumulus Clouds in Driving Pacific Climate Variability. *J. Climate,* 27, 5119-5131.

[2] **Bellomo K.,** A.C. Clement, J.R. Norris, and B.J. Soden, 2014: Observational and Model Estimates of Cloud Amount Feedback over the Indian and Pacific Oceans. *J. Climate*, 27, 925–940.

[1] Costa A., A.R. Osborne, D.T. Resio, S. Alessio, E. Chirivi', E. Saggese, **K. Bellomo**, and C.E. Long, 2014: Soliton Turbulence in Shallow Water Ocean Surface waves. *Phys. Rev. Lett*. 113, 108501.

Presentations

Oral: "Impacts of a weakened AMOC on precipitation over the Euro-Atlantic region in the EC-Earth3 climate model", January 2023, AMS annual meeting, Denver, CO, USA and online.

Oral: "Impacts of a weakened AMOC on precipitation over the Euro-Atlantic region in the EC-Earth3 climate model", December 12-16, 2022, AGU annual meeting, Chicago, IL, USA and online.

[invited] Oral: "Impacts of a weakened AMOC on precipitation over the Euro-Atlantic region in the EC-Earth3 climate model", TiPES monthly webinar series, December 7, 2022, online.

Oral: "Impacts of a weakened AMOC on precipitation over the Euro-Atlantic region in the EC-Earth3 climate model", November 17-18, 2022, THEMES, Venice, Italy.

Oral: "Impacts of a weakened AMOC on precipitation over the Euro-Atlantic region in the EC-Earth3 climate model", October 11-13, 2022, Lund, Sweden and online.

Oral: "The climate impacts of an abrupt AMOC weakening on the European winters", European Geophysical Union General Assembly, May 23-27, 2022, Vienna, Austria and online.

[invited] Oral: "Global and regional impacts of an abrupt AMOC decline", Potsdam Institute for Climate Impact Research, December 15, 2021, online

[invited] Oral: "The role of external forcing for AMV and consequences for predictability", Workshop on Climate Predictability in the North Atlantic and Arctic Sector, September 2021, Copenhagen, Denmark, and online

Oral: "Future climate change scenarios shaped by inter-model differences in Atlantic Meridional Overturning Circulation response", International workshop for mid-latitude air-sea interaction, June 12-14, 2021, online

Poster: "Weather impacts of an AMOC decline in the EC-Earth climate model", TiPES annual meeting, June 7-11, 2021, online

Oral: “Future climate change scenarios shaped by inter-model differences in Atlantic Meridional Overturning Circulation response”, European Geophysical Union General Assembly, April 19-30, 2021 , online

[invited] Oral: “Future climate change scenarios shaped by inter-model differences in Atlantic Meridional Overturning Circulation response”, TiPES monthly webinar series, February 3, 2021, online

Poster: “Impacts of the inter-model spread in AMOC change in projections of future climate change”, American Geophysical Union Fall meeting, December 1-17, 2020, online

[invited] Oral: “Impacts of the inter-model spread in AMOC change in projections of future climate change”, University of Trento, October 15, 2020, online

Oral: “Investigating the inter-model spread in AMOC decline rates in CMIP6 model simulations”, TiPES annual meeting, July 2-4, 2020, online

Oral: “Observational and model estimates of cloud amount feedback over the Indian and Pacific Oceans”, ISCCP symposium for Bill Rossow, June 6, 2017, Columbia University, New York, NY, USA

[invited] Oral: “The influence of cloud feedbacks on leading modes of internal climate variability”, May 2017, NASA GISS, NY, New York, USA

[invited] Oral: “Investigating the role of external radiative forcings in driving the Atlantic Multidecadal Oscillation”, May 2017, University of Rhode Island, RI, USA

[invited] Oral: “Investigating the role of external radiative forcings in driving the Atlantic Multidecadal Oscillation”, February 22, 2017, New York University, New York, NY, USA

[invited] Oral: “The influence of cloud feedbacks on climate variability and change”, February 2017, McGill University, Montreal, Canada

Oral: Revisiting the role of external radiative forcing in driving the Atlantic Multidecadal Oscillation, American Geophysical Union Fall meeting, December 12-16, 2016, San Francisco, CA, USA

Poster: “Model hierarchies workshop”, November 2-4, 2016, Princeton University, Princeton, NJ, USA

[invited] Oral: “Remote influence of stratocumulus clouds on Pacific Decadal Variability”, September 29, 2016, Yale University, New Haven, CT, USA

Oral: “Evidence for weakening of tropical atmospheric circulation from cloud datasets”, September 15-18, 2015, Columbia University, New York, NY, USA

[invited] Oral: “The influence of cloud feedbacks on the leading modes of internal climate variability”, November 2014, NCAR, Boulder, CO, USA

Oral: “The influence of cloud feedbacks on the leading modes of internal climate variability”, September 18, 2014, Columbia University, New York, NY, USA

Oral: “The influence of cloud feedbacks on the leading modes of internal climate variability”, September 14, 2014, MIT, Boston, MA, USA

Oral: “The role of subtropical stratocumulus regions in driving Pacific climate variability”, American Geophysical Union Fall meeting, December 9-13, 2013, San Francisco, CA, USA

Poster: Gordon Research conference and seminar on Radiation and Climate, July 7-12, 2013, New London, NH, USA

[invited] Oral: “The influence of cloud feedbacks of Atlantic climate variability”, June 2013, Max Planck Institute for Meteorology, Hamburg, Germany

Oral: “Observational and model estimates of cloud amount feedback”, October 2012, Max Planck Institute for Meteorology, Hamburg, Germany

Oral: “An observational constraint on the cloud feedback”, Joint EUCLIPSE-CFMIP meeting on “The role of cloud processes and feedbacks in the climate system”, May 29-June 1, 2012, Paris, France

[invited] Poster: “Observational and model estimates of cloud amount feedback”, Workshop on the physics of weather and climate models”, March 20-23, 2012, NASA JPL, Pasadena, CA, USA

Poster: “Inter-Comparison of 20th Century Trends in Cloud Cover Data Sets and Estimate of CRF Change”, 92nd American Meteorological Society Annual Meeting, January 22, 2012, New Orleans, LA, USA

Poster: “Effects of low-level clouds on 20th century SST trends”, Workshop on “Hierarchical Modeling of Climate”, July 18-22, 2011, International Centre for Theoretical Physics, Trieste, Italy

Outreach activities (selected)

“CAMBIAMENTI CLIMATICI: INSOLITE PROSPETTIVE DI OSSERVAZIONE”, European Reaserchers’ Night 2021, Castello del Valentino, Turin, Italy. [link]

“Insights from the LGBTQIA+ working group at EGU 2022”, European Geophysical Union General Assembly, May 23-27, 2022, Vienna, Austria and online. [link]

“IL CLIMA CHE CAMBIA DALLA MONTAGNA AL MARE”, Giovedì Scienza, Turin, Italy. [link]

“Leveraging data science to reduce uncertainty in predictions of future climate change”, Women in Machine Learning and Data Science Seattle, November 19, 2020, online. [video]

Podcast: “The Climate Academy”, a podcast I hosted featuring interviews with fellow climate scientists. [link]

Youtube channel: “The Climate Scientist”, my youtube channel for outreach videos. [link]

Interview at the TiPES podcast: “Ocean circulation is crucial to the prediction of climate change”. [link]