Personal information

- Full Name: Alessandro Silvano
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- ORCID: https://orcid.org/0000-0002-6441-1496
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- Nationality: Italian

Education

- University of Tasmania (UTAS) – CSIRO (Australia) 2015 – 2019
  PhD in Quantitative Marine Science
  Project: *Observations of ocean – ice shelf interaction at the Totten Glacier*
  Supervisors: Steve Rintoul, Guy Williams, Beatriz Peña-Molino
- University of Turin (Italy) 2012 – 2014
  2-year Master's Degree in Physics of Complex Systems,
  Thesis title: *Icebergs in a large Greenland glacial fjord*
  Supervisors: F. Straneo, A. Provenzale
- University of Turin (Italy) 2009 – 2012
  3-year Bachelor's Degree in Physics
  Thesis title: *Formation of sand-ripples in seabed*
  Supervisor: M. Onorato

Employment

- University of Southampton (UoS, UK): Proleptic Lecturer 2023 – present
- European Space Agency (Italy): Visiting Scientist 2024
- UoS: NERC Independent Research Fellow 2021 – present
- UoS: Research Fellow 2019 – 2021
- CSIRO: Casual Officer 2018 – 2019
- Woods Hole Oceanographic Institution (US): Gori Fellow (guest student) 2014

Schools and courses

- School of Geopolitics, Limes, Italy (2024)
- Advanced Climate Dynamics Courses: summer school in Finse, Norway (2018)
- Fluid Dynamics of the Sustainability and the Environment: summer school in Paris, France (2017)
- Sea-ice field course, Lake Saroma, Hokkaido, Japan (2016)
- Biogeochemistry of the Earth System: winter school, Hobart, TAS, Australia (2015).

Awards

- *EGU outstanding early career researcher in Ocean Science* (2024)
- *Faculty of Environmental and Life Sciences Dean's prize award for research*, UoS (2023)
- *Uwe Radok Award for best PhD thesis in the fields of meteorology, oceanography, glaciology or climatology awarded in Australia* (2020)
- *Royal Society of Tasmania Awards for best PhD thesis* (2020)
- *Finalist of the nationwide Eureka Australia Prize for Environmental Research* (2017)
- *Bank Australia Scholarship* (2015)
- *Distinguished Dissertation Award*, Italian Glaciological Committee (2014)

Bursaries and fellowships

- *SCAR bursary to attend the FRISP (Forum for Research into Ice Shelf Processes) (2018).*
- *Australian Postgraduate Award, Australia (2015)*. Fellowship awarded by the Australian Government to PhD students with "exceptional research potential" to cover their salary.
- *Research Top-up scholarship, University of Tasmania (2015)*. Scholarship awarded by the University of Tasmania to PhD students.
- *International Postgraduate Fellowship, Australia (2015*). This fellowship is awarded by the Australian Government to international students to cover University fees of PhD programmes.
- *Gori Fellowship, Woods Hole Oceanographic Institution (WHOI), U.S. (2014*). This fellowship awarded by WHOI allows postgraduate student to develop a project.

Grants

- *NERC Independent Research Fellowship.* PI. Control of Earth's climate(s) by the polar Southern Ocean*,* NE/V014285/1, 2021- 2026
- *ESA-funded Southern Ocean Freshwater (SO-Fresh).* Part of the ESA Earth Observation Envelope Program (EOEP-5). Analysis of a new product of Southern Ocean surface salinity derived by satellites (PI, Rafael Catany, Argans), 2021-2023
- *ERC-funded (UKRI Guarantee).* Collaborator looking at the role of sea ice in upper ocean changes in Southern Ocean (PI Alberto Naveira Garabato). Generation of the ocean's permanent pycnocline in the ice-covered Southern Ocean. EP/X025136/1, 2022-2027
- *National Geographic polar expeditions.* PI. Southern Ocean salinity measured on touristic vessels. Logistic expenses covered, 2022 – ongoing

Fieldwork experiences

- National Geographic Polar Expedition (2023)
- V2 expedition (Southern Ocean), R/V Aurora Australis on cruise number AU1602 (2017): planning and delivery of the physical oceanographic component of the research cruise
- Planning ICECAP (International Collaboration for Exploration of the Cryosphere through Aerogeophysical Profiling) campaigns in East Antarctica (2016 – 2018)
- Sea ice fieldwork at Lake Saroma, Hokkaido, Japan (2016)
- *Line W* cruise (North Atlantic), R/V Knorr on cruise number KN218 (2014): CTD watch/sample collection

Software experience

- MATLAB, FORTRAN, Python, C, Mathematica, EXCEL, Mac OS X / Unix, Microsoft Windows

Outreach and academic activities

- Young Antarctic Scientists: Teaching Antarctic Science in Australian schools (2016 – 2018)
- Interviews for newspaper (e.g. Washington Post) and science magazines (e.g. Scientific American) as well as online videos (YouTube) describing my research
- Writing articles in science magazines for broad audience (e.g. Australasian Science)
- Co-organizer of "Physical Oceanography" seminar National Oceanography Centre (2019 – 2022)
- Co-organizer of "Earth and Ocean seminar" at National Oceanography Centre (2021 – 2022)

Leadership

- Theme Leader of INSTANT (INStabilities and Thresholds in ANTarctica), a 8-year SCAR programme with > 300 members that aims to reduce uncertainty in future sea level rise due to Antarctic Ice Sheet melting (https://www.scar-instant.org)
- Leadership role in the Amundsen and Bellingshausen seas working group of SOOS (Southern Ocean Observing System; https://www.soos.aq/activities/rwg/abs)

Reviewer

- Intergovernmental Panel on Climate Change (IPCC) report
- Eurofleets proposal (European Commission's Horizon 2020)
- Journal of Geophysical Research: Oceans; Geophysical Research Letters; Nature Geoscience; Nature Communications; Scientific Reports; Communications Earth and Environment Journal of Oceanography; Journal of Climate; Ocean Modelling; The Cryosphere; Deep Sea Research; Frontiers in Marine Science; Earth System Science Data; Ocean Science
- PhD thesis committees (University of Trieste, Italy; Université Catholique de Louvain, Belgium, Parthenope University of Naples, University of Southampton)

Language proficiency

- English (fluent)
- French (basic)
- Italian (native)

Selected Invited seminars

- AGU Fall Meeting (2024)
- Durham University, U.K. (2024)
- EGU (2024)
- EU project OCEAN:ICE (2023)
- SCAR AntClimNow (2023)
- UCL, U.K. (2023)
- Joint Commission on Ice-Ocean interactions, IAPSO-IACS (2022)
- GEOMAR, Kiel, Germany (2021)
- Royal Society of Tasmania (2021)
- AMOS, Australia (2021)
- ESA (2020)
- Symposium celebrating Arnold Gordon's contributions to Physical Oceanography, U.S. (2020)
- University of Liverpool, U.K. (2019)
- University of Bristol, Bristol Glaciology Centre, U.K. (2019)
- Parthenope University, Naples, Italy (2019)
- Ocean Sciences Meeting, U.S. (2018)
- University of Turin, Department of Physics, Italy (2018)
- Australian Academy of Science. Hobart, TAS, Australia (2017).

Publications

- Zhang, Z., **et al.** 2024. Evidence for large-scale climate forcing of dense shelf water variability in the Ross Sea. *Nature Communications.* 15, 8190.
- Donda, F., **et al**. 2024 Footprint of sustained poleward warm water flow within East Antarctic submarine canyons. *Nature Communications* 15, 6028.
- Narayanan, A. **et al.** 2024. Ekman-driven salt transport as a key mechanism for open-ocean polynya formation at Maud Rise. *Science Advances* 10,eadj0777.
- Si, Y., Stewart, A.L., **Silvano**, **A.**,& Naveira Garbato, A. 2024. Antarctic Slope Undercurrent and onshore heat transport driven by ice shelf melting. *Science Advances* 10, eadl0601.
- Hanna, E., **et al.** 2024. Short- and long-term variability of the Antarctic and Greenland ice sheets. *Nature Review Earth Environment* 5, 193–210.
- **Silvano, A**., et al. Observing Antarctic Bottom Water in the Southern Ocean. 2023. *Frontiers in Marine Science*. 10:1221701.
- Zhou, S., **et al.** Slowdown of Antarctic Bottom Water export driven by climatic wind and sea ice changes. 2023. *Nature Climate Change*, 13, 701–709.
- **Silvano, A.,** et al. Baroclinic ocean response to climate forcing regulates decadal variability of ice-shelf melting in the Amundsen Sea. 2022 *Geophysical Research Letters*, *49*, e2022GL100646.
- Dorschel **et al.** The International Bathymetric Chart of the Southern Ocean Version 2 (IBCSO v2). 2022. *Nature Scientific Data*. 9, 275.
- Stammerjohn, **et al**. Antarctica and the Southern Ocean. 2021, *Bulletin of the American Meteorological Society*, 102.8: S317-S356.
- **Silvano, A**., et al. Recent recovery of Antarctic Bottom Water formation in the Ross Sea driven by climate anomalies. 2020. *Nature Geoscience*, 3, 780–786.
- **Silvano, A**. Changes in the Southern Ocean. 2020, *Nature Geoscience*, 13, 4–5.
- **Silvano, A**., Rintoul, S. R., Kusahara, K., Peña-Molino, B., van Wijk, E., Gwyther, D. E., & Williams, G. D. Seasonality of warm water intrusions onto the continental shelf near the Totten Glacier. 2019, *Journal of Geophysical Research: Oceans*. 124, 4272–4289.
- Moreau, S., **et al.** Sea-ice meltwater and circumpolar deep water drive contrasting productivity in three Antarctic polynyas. 2019, *Journal of Geophysical Research: Oceans*. 124.
- **Silvano, A**., Rintoul, S. R., Peña-Molino, B., Hobbs, W. R., van Wijk, E., Aoki, S., Tamura, T., & Williams, G. D. (2018). Freshening by glacial meltwater enhances melting of ice shelves and reduces formation of Antarctic Bottom Water. *Science Advances*, 4, eaap9467.
- Greene, C. A., Blankenship, D. D., Gwyther, D. E., **Silvano, A**., & van Wijk, E. (2017). Wind causes Totten Ice Shelf melt and acceleration. *Science Advances*, 3, e1701681.
- **Silvano, A**., Rintoul, S. R., Peña-Molino, B., & Williams, G. D. (2017). Distribution of water masses and meltwater on the continental shelf near the Totten and Moscow University ice shelves. *Journal of Geophysical Research: Oceans*, 122, 2050-2068.
- Rintoul, S. R., **Silvano, A.**, Peña-Molino, B., van Wijk, E., Rosenberg, M. A., Greenbaum, J. S., & Blankenship, D. D. (2016). Ocean heat drives rapid basal melt of Totten Ice Shelf. *Science Advances*, 2, e1601610.
- **Silvano, A.**, Rintoul, S. R., & Herraiz-Borreguero, L. (2016). Ocean-ice shelf interaction in East Antarctica. *Oceanography*, 29(4), 130–143.
- Andres, M., **Silvano, A.,** Straneo, F., & Watts, D. R. (2015). Icebergs and sea ice detected with inverted echo sounders. *Journal of Atmospheric and Oceanic Technology*, 32(5), 1042-1057.