

Fabien Roquet

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Short description


Fabien R. is a physical oceanographer interested in determining what sets the global characteristics of the ocean circulation and how they vary on climatic time scales. His research interests span the three mainstays of physical oceanography: observation, theory and modeling. His initial work focused on the observation and study of the Southern Ocean. He has played an instrumental role in the development of animal-borne CTD tags, which has become over the years a major source of data in Polar Oceans. He is also interested in the study of the large-scale ocean circulation with a focus on how mixing and seawater properties influence its structure.

Formal qualifications

- **2015:** Docent in atmosphere and ocean science at the Stockholm University (Stockholm, Sweden). Swedish title equivalent to associate professor.
- **2009:** PhD in physical oceanography at the University Pierre et Marie Curie (Paris, France) obtained in October 2009 with honors. The title was: Circulation around the Kerguelen Plateau: from observations to modelling, supervised by Prof. Y.-H. Park (MNHN) and G. Madec (LOCEAN).
- **2006:** Master degree in oceanography, meteorology and environmental sciences at the University Paris 6 (Paris, France), obtained with honors.
- **2004:** Physical Engineer in computer science, statistics and image processing, graduated from Institut National des Telecommunications (Evry, France).

Employment history

- **August 2018 - present:** Professor of physical oceanography at the Department of Marine Sciences, University of Gothenburg
- **October 2014 - July 2018:** Research associate at the Department of Meteorology of the Stockholm University. 4-year funding through a young-researcher grant obtained from the Swedish Research Council (VR).
- **March 2014 - September 2014:** Post-doctoral research scientist at the Department of Meteorology of the Stockholm University funded by the Bolin Center for climate research (originally a 2-year position).
- **March 2012 - February 2014:** Post-doctoral research scientist at the Department of Meteorology of the Stockholm University. 2-year funding through a post- doctoral grant obtained from the Swedish Research Council (VR).
- **December 2009 - February 2012:** 2-year post-doctoral research scientist with Prof. Carl Wunsch (MIT, Cambridge, US). Funded through the Estimating the Circulation and Climate of the Ocean (ECCO) consortium which is directed at making the best possible estimates of ocean circulation, using inverse methods to adjust a global configuration of the MITgcm model to a wide variety of available observations.

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- **September 2006 - October 2009:** PhD student at the University Pierre et Marie Curie (Paris, France). Funded through a 3-year doctoral scholarship from the French ministry of science. Supervisors: Prof. Young-Hyang Park (Museum of Natural History, Paris), Gurvan Madec (LOCEAN, Paris) and Frederic Vivier (LOCEAN).
 - **March 2004 - August 2006:** Engineer working on seal instrumentation and hydrographic data management at the Museum of National History, Paris. Position funded by the CNES (French spatial agency).

Research grants

- **2023** Co-applicant of the ARC Discovery Project “Using animal-borne sensors to unravel East Antarctic coastal productivity”, AUD800,000, 2023-2027)
- **2019** Co-applicant of the European H2020 project SO-CHIC (Southern Ocean Carbon and Heat Impact on Climate, <http://www.sochic-h2020.eu/>, 80,000kkr)
- **2015** AAS Grant program, Seals as Oceanographic Samplers, PI Prof Rob Harcourt. Grant total request: AUD74200 (500ksek) as part of a total funding contribution of AUD1300000 (~9000ksek) for the whole program.
- **2014** Young-Researcher grant for a 4-year period at the Stockholm University, funded by the Swedish Research Council (3000ksek). Mean success rate: 7%.
- **2013** Post-doctoral fellowship for a 2-year post-doctoral position at the Stockholm University funded by the Bolin Center for Climate Research.
- **2011** Fellowship for a 2-year post-doctoral position at the Stockholm University, funded by the Swedish Research Council (VR).

Other grants

- **2023** Bjerckness Visiting Fellowship to stay 15 days in Bergen, Norway.
- **2020** PIL/DigiKomp, Sverige - Universitet och högskolor. “Learning mathematics for Marine sciences using an online courseware”, 75kkr.
- **2016** Visiting Scholarships to stay one month at the University of Tasmania, Australia
- **2013** Visiting Scholarships to stay one month at the University of Tasmania, Australia

Position of trust and leadership

- Chair of the newly-formed OCG-GOOS network “Animal Borne Ocean Sensors” AniBOS since 2020.
- Chair of the MEOP consortium that currently includes around 40 members from a dozen different nations (www.meop.net).
- Member of the International Meteorological Institute (IMI) board
- 2018-2021: Member of the Department Board (IR) at the Department of Marine Sciences, University of Gothenburg
- 2018-present: Member of the undergraduate preparation committee (GRUB) of the Department of Marine Sciences, University of Gothenburg
- Member of the Recruitment Panel for Ship Manager at the Department of Marine Sciences, University of Gothenburg

- Participation to the EOOS (European Ocean Observing System, <http://www.eoos-ocean.eu/>) in situ workshop on May 22-23, 2015 at BELSPO, Brussels
- Solicited talk at the “Open session on ocean processes and techniques PICO” session at the EGU in Vienna, April 2019.
- Invited speaker at the workshop “The Dynamics of Rotating Fluids” at UCL, London in January 2019.
- Invited speaker at the ALPS-II (Autonomous and Lagrangian Platforms and Sensors) meeting in March 2017 at Scripps (USA).
- Referee assignments: assignments in a dozen of different journals including Science, Geophysical Research Letters and Journal of Physical Oceanography.
- Associate Editor for physical oceanography at the international journal Tellus A
- Associate Editor for Ocean Observation at the international journal Frontiers Marine Science
- Member of EGU, AGU and of the biogeography society.

Development of tools and products

- Since 2014, Fabien R. is leading the development of the MEOP-CTD database. The data from animal-borne instruments are stored in the MEOP-CTD database, which is publicly accessible through the MEOP data portal <http://meop.net>.
- Contribution to the development of the IOC-UNESCO TEOS-10 (Thermodynamic Equation of Seawater – 2010) standard, through the development of accurate polynomial expressions for the equation of state of seawater that are now distributed on <http://www.teos-10.org>.
- Contributions to the development of the widely-used state-of-the-art ocean model NEMO (Nucleus of European Model for the Ocean) on the thermodynamic and vertical mixing modules.

Teaching

- **2018-2021:** course leader of OCM100 Physical Oceanography I, 15hp Master course, Department of Marine Sciences, University of Gothenburg
- **2019-2021:** course leader of OCM210 Physical Oceanography II, 15hp Master course, Department of Marine Sciences, University of Gothenburg
- **2018-2021:** course leader of MAV110 Marine modelling and databases, 7.5hp Bachelor course, Department of Marine Sciences, University of Gothenburg
- **2019:** course leader of OC6310 Ocean modelling, 15hp Master course, Department of Marine Sciences, University of Gothenburg
- **2014-2017:** course leader of Global Climate Systems, 15hp Master course, Department of Meteorology at Stockholm University
- **2012-2014:** course leader of Dynamic Meteorology, 7.5hp Master course, Department of Meteorology at Stockholm University

Supervision

Post-doc supervisions:

- **2021-2023:** Aditya Narayanan, main supervisor



PhD supervisions:

- **2020-present:** Birte Gülk, main supervisor
- **2018-present:** Romain Caneill-Lortal, main supervisor
- **2014-2018:** Etienne Pauthenet, main supervisor
- **2012-2014:** Saeed Falahat, co-supervisor

Master thesis:

Friederike Pollmann (2014), Rickard Lindqvist (2015), Baptiste Picard (EPHE, 2017), Marlen Kolbe (2020), Sofia Bosi (2020, co-supervisor), Sun Jing (2020), Benjamin Schmiedel (2020), Hanna Brandner (2021), Simon Pliskosvaz (2022)

Bachelor thesis:

Marcus Lindqvist (2017), Josefin Rydström (2021), Lovisa Holmquist (2022)

Short-term internships:

Friederike Pollmann (2013), Nora Leps (2014), Romain Caneill (2016), Elea Lastes (2019), Junlin Chen (2019), Louna Louis (2019), Eden McLachlan (2020), Alice Carle (2020), Manon Malsang (2021), Vincent Doriot (2022)

Fieldwork Experience

- **Jan. - Mar. 2016 :** Deployment of loggers on elephant seals and fur seals at the Kerguelen Islands (Southern Indian Ocean).
- **July 2011 :** Research cruise (Line W) between Cape Cod and Bermuda Islands on board the R/V Oceanus.
- **Mar. 2011 :** XBT section between Iceland and Newfoundland on board the merchant vessel Reykjafoss.
- **Feb. - Mar. 2009 :** TRACK oceanographic cruise on board the French R/V Marion Dufresne, over the Kerguelen Plateau in the Southern Indian Ocean (40 days of field work)
- **Jan. 2008 :** DOCONUG oceanographic cruise on board R/V Tethys, in the Gulf of Lyon, Mediterranean Sea
- **Jan. - Apr. 2006 :** Deployment of loggers on elephant seals at the Kerguelen Islands (Southern Indian Ocean).
- **June 2005 :** COSMOS oceanographic cruise on board R/V Cote de la Manche, in the Bay of Biscay, Atlantic.

Citation count

To date, Roquet have co-authored 61 peer-reviewed papers. He currently has a H-index of 29 (Scopus, Apr 2023). Several publications are in high profile journals, including Nature, Proceedings of the National Academy of Science, Nature Geoscience, Nature Communication and Science Advances.





Peer-reviewed articles

1. Klocker, A., Naveira Garabato, A.C., **Roquet, F.**, de Lavergne, C., Rintoul, S.R., 2023. Generation of the Internal Pycnocline in the Subpolar Southern Ocean by Wintertime Sea Ice Melting. *Journal of Geophysical Research: Oceans* 128, e2022JC019113.
2. **Roquet, F.**, Ferreira, D., Caneill, R., Schlesinger, D., Madec, G., 2022. Unique thermal expansion properties of water key to the formation of sea ice on Earth. *Science Advances* 8, eabq0793.
3. **Roquet, F.**, Wunsch, C., 2022. The Atlantic Meridional Overturning Circulation and its Hypothetical Collapse. *Tellus A: Dynamic Meteorology and Oceanography* 74, 393–398.
4. Caneill, R., **Roquet, F.**, Madec, G., Nycander, J., 2022. The Polar Transition from Alpha to Beta Regions Set by a Surface Buoyancy Flux Inversion. *Journal of Physical Oceanography* 52, 1887–1902.
5. Portela, E., Rintoul, S.R., Herraiz-Borreguero, L., **Roquet, F.**, Bestley, S., van Wijk, E., Tamura, T., McMahon, C.R., Guinet, C., Harcourt, R., Hindell, M.A., 2022. Controls on Dense Shelf Water Formation in Four East Antarctic Polynyas. *Journal of Geophysical Research: Oceans* 127, e2022JC018804.
6. de Boer, A.M., Hutchinson, D.K., **Roquet, F.**, Sime, L.C., Burls, N.J., Heuzé, C., 2022. The Impact of Southern Ocean Topographic Barriers on the Ocean Circulation and the Overlying Atmosphere. *Journal of Climate* 35, 5805–5821.
7. Pauthenet, E., Bachelot, L., Balem, K., Maze, G., Tréguier, A.-M., **Roquet, F.**, Fablet, R., Tandeo, P., 2022. Four-dimensional temperature, salinity and mixed layer depth in the Gulf Stream, reconstructed from remote sensing and in situ observations with neural networks. *EGUsphere* 1–33.
8. McMahon, C.R., **Roquet, F.**, 2022. Animal-Borne Ocean Sensors: A Decadal Vision Through New Eyes. *Marine Technology Society Journal* 56, 36–38.
9. Portela, E., Rintoul, S.R., Bestley, S., Herraiz-Borreguero, L., van Wijk, E., McMahon, C.R., **Roquet, F.**, Hindell, M., 2021. Seasonal Transformation and Spatial Variability of Water Masses Within MacKenzie Polynya, Prydz Bay. *Journal of Geophysical Research: Oceans* 126, e2021JC017748.
10. McMahon, C.R., **Roquet, F.**, Baudel, S., Belbeoch, M., Bestley, S., Blight, C., Boehme, L., Carse, F., Costa, D.P., Fedak, M.A., Guinet, C., Harcourt, R., Heslop, E., Hindell, M.A., Hoenner, X., Holland, K., Holland, M., Jaine, F.R.A., Jeanniard du Dot, T., Jonsen, I., Keates, T.R., Kovacs, K.M., Labrousse, S., Lovell, P., Lydersen, C., March, D., Mazloff, M., McKinzie, M.K., Muelbert, M.M.C., O'Brien, K., Phillips, L., Portela, E., Pye, J., Rintoul, S., Sato, K., Sequeira, A.M.M., Simmons, S.E., Tsonos, V.M., Turpin, V., van Wijk, E., Vo, D., Wege, M., Whoriskey, F.G., Wilson, K., Woodward, B., 2021. Animal Borne Ocean Sensors – AniBOS – An Essential Component of the Global Ocean Observing System. *Frontiers in Marine Science* 8, 1625.
11. Kolbe, M., **Roquet, F.**, Pauthenet, E., Nerini, D., 2021. Impact of Thermohaline Variability on Sea Level Changes in the Southern Ocean. *Journal of Geophysical Research: Oceans* 126, e2021JC017381.
12. Bosi, S., Broström, G., **Roquet, F.**, 2021. The Role of Stokes Drift in the Dispersal of North Atlantic Surface Marine Debris. *Frontiers in Marine Science* 8, 1137.
13. Labrousse, S., Ryan, S., **Roquet, F.**, Picard, B., McMahon, C. R., Harcourt, R., Hindell, M., Le Goff, H., Lourenco, A., David, Y., Sallée, J.-B., and Charrassin, J.-B., 2021. Weddell seal behaviour during an exceptional oceanographic event in the Filchner-Ronne Ice Shelf in 2017. Doi: 10.1017/S0954102021000092
14. de Lavergne, C., Vic, C., Madec, G., **Roquet, F.**, Waterhouse, A. F., Whalen, C. B., Cuyper, Y., Bouruet-Aubertot, P., Ferron, B., and Hibiya, T., 2020. A parameterization of local and remote tidal mixing. *Journal of Advances in Modeling Earth Systems*, doi: 10.1029/2020MS002065.
15. Scambos, T. A., Stammerjohn, S., Abrahamsen, E. P., Barreira, S., Bitz, C. M., Butler, A., Clem, K. R., Colwell, S., Coy, L., de Laat, J., du Plessis, M. D., Fogt, R. L., Fricker, H. A., Fyfe, J., Gardner, A. S., Gille, S. T., Gorte, T., Gregor, L., Hobbs, W., Johnson, B., Keenan, E., Keller, L. M., Kramarova, N. A.,



- Lazzara, M. A., Lenaerts, J. T. M., Lieser, J. L., Liu, H., Long, C. S., Maclennan, M., Massom, R. A., Massonnet, F., Mazloff, M. R., Mikolajczyk, D., Narayanan, A., Nash, E. R., Newman, P. A., Petropavlovskikh, I., Pitts, M., Queste, B. Y., Reid, P., **Roquet, F.**, Santee, M. L., Strahan, S., Swart, S., and Wang, L., 2020. Antarctica and the Southern Ocean. *Bulletin of the American Meteorological Society*, 101:S287-S320.
16. de Lavergne, C., Falahat, S., Madec, G., **Roquet, F.**, Nycander, J., Vic, C., 2019. Toward global maps of internal tide energy sinks. *Ocean Modelling*, doi: 10.1016/j.ocemod.2019.03.010.
 17. Harcourt, R., Sequeira, A. M. M., Zhang, X., **Roquet, F.**, Komatsu, K., et al., 2019. Animal-Borne Telemetry: an integral component of the ocean observing toolkit . *Frontiers Marine Science*, doi: 10.3389/fmars.2019.00326
 18. Siegelman, L., **Roquet, F.**, Mensah, V., Rivière, P., Pauthenet, E., Picard, B., Guinet, C., 2019. Correction and accuracy of high- and low-resolution CTD data from animal-borne instruments. *Journal of Atmospheric and Oceanic Technologies*, doi: 10.1175/JTECH-D-18-0170.1
 19. Pauthenet E., **Roquet F.**, Madec G., Sallée, J.-B., Nerini D., 2019. The thermohaline modes of the global ocean. *Journal of Physical Oceanography*, doi: 10.1175/JPO-D-19-0120.1
 20. Piñones, A., Hofmann, E., Costa, D., Goetz, K., Burns, J., **Roquet, F.**, Dinniman, M., Klinck, J.M., 2019. Hydrographic variability along the inner and mid-shelf region of the western Ross Sea obtained using instrumented seals. *Progress in Oceanography*, doi: 10.1016/j.pocean.2019.01.003
 21. Pauthenet, E., **Roquet, F.**, Madec, G., Guinet, C., Hindell, M., McMahon, C.R., Harcourt, R., Nerini, D., 2018. Seasonal meandering of the Polar Front upstream of the Kerguelen Plateau. *Geophysical Research Letters*, doi: 10.1029/2018GL079614
 22. Ferreira D., Cessi P., Coxall H., de Boer A., Dijkstra H. A., Drijfhout S. S., Eldevik T., Harnik N., McManus J. F., Marshall D. P., Nilsson J., **Roquet F.**, Schneider T., Wills R. C., 2018. Atlantic-Pacific asymmetry in deep water formation. *Annual Review of Earth and Planetary Sciences*, 46(1). doi: 10.1146/annurev-earth-082517-010045
 23. Mallett H. K. W., Boehme L., Fedak M., Heywood K. J., Stevens D. P. and **Roquet F.**, 2018. Seasonal variation in the distribution and properties of Circumpolar Deep Water in the eastern Amundsen Sea, using seal-borne tags. *Geophysical Research Letters*, doi: 10.1029/2018GL077430
 24. Mensah V., **Roquet F.**, Picard B., Pauthenet E., Guinet C., 2018. A correction methodology for the thermal mass induced-errors of CTD tags mounted on marine mammals. *Journal of Atmospheric and Oceanic Technologies*, doi: 10.1175/JTECH-D-17-0141.1 A.
 25. Fransner F., Gustafsson E., Tedesco L., Vichi M., Hordoir R., **Roquet F.**, Spilling K., Kuznetsov I., Eilola K., Morth C.-M., Humborg C., Nycander J., 2018. Non-Redfieldian dynamics explain seasonal pCO₂ drawdown in the Gulf of Bothnia. *Journal of Geophysical Research: Oceans*, 123. doi: 10.1002/2017JC013019
 26. Labrousse S., Williams G. D., Tamura T., Bestley S., Sallee J.-B., Fraser A. D., Sumner M., **Roquet F.**, Heerah K., Guinet C., Harcourt R. G., McMahon C. R., Hindell M. A., Charrassin J.-B., 2018. Coastal polynyas: Winter oases for top predators in East Antarctica. *Scientific reports*, doi: 10.1038/s41598-018-21388-9
 27. **Roquet F.**, Lindqvist R., Pollmann F., Ferreira D., Madec G., 2017. Stability of the thermohaline circulation examined with a one-dimensional fluid loop. *Tellus A*, 69:1380490, doi: 10.1080/16000870.2017.1380490.
 28. de Lavergne C., Madec G., **Roquet F.**, Holmes R. M., McDougall T.J., 2017. Abyssal ocean overturning shaped by seafloor distribution. *Nature* 551, 181–186. doi: 10.1038/nature24472
 29. Chambault P., **Roquet F.**, Benhamou S., Baudena A., Pauthenet E., deThoisy B., Bonola M., Dos Reis V., Brucker M., Le Maho Y., Chevallier D., Crasson R., 2017. The Gulf Stream frontal system: a key oceanographic feature in the selection of foraging habitats by the leatherback turtle? *Deep-Sea Research Part I*, doi: 10.1016/j.dsr.2017.03.003
 30. Mazloff M. R., Sallée J.-B., Menezes V. V., Macdonald A. M., Meredith M. P., Newman L., Pellichero V., **Roquet F.**, Swart S., Wählin A., 2017. Southern Ocean [in "State of the Climate in 2016"]. *Bull. Amer. Meteor. Soc.*, 98 (8).



31. Nakanowatari T., Ohshima K., Mensah V., Mitani Y., Hattori K., Kobayashi M., **Roquet F.**, Sakurai Y., Mitsudera H., Wakatsuchi M., 2017. Hydrographic observations by instrumented marine mammals in the Sea of Okhotsk. *Polar Science*, doi: 10.1016/j.polar.2017.06.001
32. Pauthenet E., **Roquet F.**, Madec G., Nerini D., 2017. A linear decomposition of the Southern Ocean thermohaline structure. *Journal of Physical Oceanography*, doi: 10.1175/JPO-D-16-0083.1
33. Pellichero V., Sallee J.-B., Schmidtko S., **Roquet F.**, Charrassin J.-B., 2017. The ocean mixed-layer under Southern Ocean sea-ice: seasonal cycle and forcing. *Journal of Geophysical Research (Ocean)*, doi: 10.1002/2016JC011970
34. Stewart K. D., Hogg A., Haine T., **Roquet F.**, 2017. On Cabbeling and Thermobaricity in the Surface Mixed Layer. *J. Phys. Oceanogr*, 47:1775-1787. doi: 10.1175/JPO-D-17-0025.1.
35. Chambault P., de Thoisy B., Heerah K., Conchon A., Barrioz S., Dos Reis V., Kelle L., Picard B., **Roquet F.**, Le Maho Y., Chevallier D., 2016. The influence of oceanographic and biological features on sea turtles' foraging behavior in the horizontal and vertical dimensions: the case of olive ridley migrating from French Guiana. *Progress in Oceanography*. doi: 10.1016/j.pocean.2016.01.006
36. Hindell M. A., McMahon C. R., Bester M. N., Boehme L., Costa D., Fedak M. A., Guinet C., Herraiz-Borreguero L., Harcourt R. G., Huckstadt L., Kovacs K. M., Lydersen C., McIntyre T., Muelbert M., Patterson T., **Roquet F.**, Williams G. and Charrassin J.-B., 2015. Circumpolar habitat use in the southern elephant seal: implications for foraging success and population trajectories. *Ecosphere*. doi: 10.1002/ecs2.1213
37. Williams G., Herraiz-Borreguero L., **Roquet F.**, Tamura T., Ohshima K., Fukamachi Y., Fraser A., Gao L., Chen H., McMahon C., Harcourt R., Hindell M., 2016. The suppression of Antarctic Bottom Water formation by melting ice shelves in Prydz Bay. *Nature Communication*. doi: 10.1038/ncomms12577
38. Zhang X., Thompson A., Mar Flexas M., **Roquet F.**, Bornemann H., 2016. Circulation and meltwater distribution in the Bellingshausen Sea: from shelf break to coast. *Geophysical Research Letters*. doi: 10.1002/2016GL068998
39. Nycander J., Hieronymus M., **Roquet F.**, 2015. The nonlinear equation of state of sea water and the global water mass distribution. *Geophysical Research Letters*. doi: 10.1002/2015GL065525
40. **Roquet F.**, Madec G., Brodeau L., Nycander J., 2015. Defining a simplified yet "realistic" equation of state for seawater. *Journal of Physical Oceanography*. doi: 10.1175/JPO-D-15-0080.1
41. **Roquet F.**, Madec G., McDougall T. J. and Baker P., 2015. Accurate polynomial expressions for the density and specific volume of seawater using the TEOS-10 standard. *Ocean modelling*. doi: 10.1016/j.ocemod.2015.04.002
42. Pollmann F., **Roquet F.** and Madec G., 2015. Effects of the asymmetry between surface and interior flow on the dynamics of a thermohaline loop. *Journal of Physical Oceanography*. doi: 10.1175/JPO-D-15-0022.1
43. Labrousse S., Vacquié-Garcia J., Heerah K., Guinet C., Sallee J.-B., Authier M., Picard B., **Roquet F.**, Bailleul F., Hindell M., Charrassin J.-B., 2015. Winter habitat use of southern elephant seals in the sea ice. *Progress in Oceanography*. doi: 10.1016/j.pocean.2015.05.023
44. Falahat S., Nycander J., **Roquet F.** and Zarroug M., 2014. Global calculation of tidal energy conversion into vertical normal modes. *J. Phys. Oceano.*, doi: 10.1175/JPO-D-14-0002.1
45. Falahat S., Nycander J., **Roquet F.**, Thurnherr A. M. and Hibiya T., 2014. Comparison of calculated energy flux of internal tides with microstructure measurements. *Tellus A*, 66, doi: 10.3402/tellusa.v66.23240
46. **Roquet F.**, Williams G., Hindell M. A., Harcourt R., McMahon C. R., Guinet C., Charrassin J.-B., Reverdin G., Boehme L., Lovell P. and Fedak M. A., 2014. A Southern Indian Ocean database of hydrographic profiles obtained with instrumented elephant seals. *Nature Scientific Data*, 1:140028, doi: 10.1038/sdata.2014.28
47. Kitade, Y., Shimada, K., Tamura, T., Williams, G. D., Aoki, S., Fukamachi, Y., **Roquet F.**, Hindell, M., Ushio, S., and Ohshima, K. I., 2014. Antarctic Bottom Water production from the Vincennes Bay



- Polynya, East Antarctica. *Geophysical Research Letters*. 41, 2014GL059971. doi: 10.1002/2014GL059971
48. **Roquet F.**, Wunsch C., Forget G., Heimbach P., Guinet C., Reverdin G., Charrassin J.-B., Bailleul F., Costa D. P., Huckstadt L. A., Goetz K. T., Kovacs K. M., Lydersen C., Biuw M., Nøst O. A., Bornemann H., Ploetz J., Bester M. N., McIntyre T., Muelbert M. C., Hindell M. A., McMahon C. R., Williams G., Harcourt R., Field I. C., Chafik L., Nicholls K. W., Boehme L., and Fedak M. A., 2013. Estimates of the Southern Ocean General Circulation Improved by Animal-Borne Instruments. *Geoph. Res. Letts.*, 40:1-5. doi: 10.1002/2013GL058304
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 50. Ohshima K. I., Fukamachi Y., Williams G. D., Nihashi S., **Roquet F.**, Kitade Y., Tamura T., Hirano D., Herraiz-Borreguero L., Field I., Hindell M., Aoki S., and Wakatsuchi M., 2013. Antarctic Bottom Water production by intense sea-ice formation in the Cape Darnley Polynia. *Nature Geoscience*. 6:235-240. doi: 10.1038/ngeo1738
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 52. **Roquet F.**, Charrassin J.-B., Marchand S., Boehme L., Fedak M., Reverdin G., and Guinet C., 2011. Delayed-Mode Calibration of Hydrographic Data Obtained from Animal-Borne Satellite Relay Data Loggers, *J. Atmosph. And Ocean. Tech.*, 28:787-801. doi: 10.1175/2010JTECHO801.1
 53. Bailleul F., Authier M., Ducatez S., **Roquet F.**, Charrassin J.-B., Cherel Y., and Guinet C., 2010. Looking at the unseen: combining animal bio-logging and stable isotopes to reveal a shift in the ecological niche of a deep diving predator. *Ecography*, 33(4):709-719. doi: 10.1111/j.1600-0587.2009.06034.x
 54. **Roquet F.**, Park Y.-H., Guinet C., Bailleul F., and Charrassin J.-B., 2009. Observations of the Fawn Trough Current over the Kerguelen Plateau from instrumented elephant seals. *Journal of Marine Systems*, 78:377-393. doi: 10.1016/j.jmarsys.2008.11.017
 55. Park Y.-H., Vivier F., **Roquet F.**, and Kestenare E., 2009. Direct observations of the ACC transport across the Kerguelen Plateau. *Geoph. Res. Letts.*, 36, L18603. doi: 10.1029/2009GL039617
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