

# Dilmahamod Ahmad Fehmi

Dalhousie University and GEOMAR Helmholtz for Ocean Research Kiel

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## Research Positions

- 2019 – present**      **Ocean Frontier Institute Postdoctoral Fellow**  
*Dalhousie University, Halifax, Canada, in collaboration with GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany*  
Research Focus: Role of mesoscale eddies for the Labrador Sea's Carbon Uptake  
Advisors: Dr. Katja Fennel and Dr. Johannes Karstensen
- 2018 – 2019**      **Post-doctoral Researcher**  
*GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany*  
Research Focus: Generation mechanisms of sub-mesoscale/mesoscale eddies in the tropical Atlantic Ocean off north-western Africa  
Advisor: Dr. Johannes Karstensen
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## Education

- 2014 – 2018**      **Ph.D. in Physical Oceanography (Joint Degree)**  
*University of Cape Town, South Africa – University of Brittany, Brest, France*  
Advisors: Dr. Chris Reason, Dr. Pierrick Penven, Dr. Juliet Hermes, Dr. Borja Aguiar-González  
Thesis: The biophysical processes controlling the South-East Madagascar Bloom
- 2013 – 2014**      **MSc. in Ocean and Climate Dynamics**  
*University of Cape Town, South Africa*  
Advisors: Dr. Chris Reason, Dr. Juliet Hermes  
Thesis: Links between the Seychelles-Chagos Thermocline Ridge and large-scale climate modes, and primary productivity
- 2009 – 2012**      **BSc. In Marine Science and Technology**  
*University of Mauritius, Mauritius*
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## Funding Records

- 2019**      Ocean Frontier Institute Fellowship – **150K€**
- 2018**      Mobility South-North and North South (Institute of Research for Development, France) – **8K€**
- 2017**      Mobility South-North and North South (Institute of Research for Development, France) – **8K€**
- 2014 – 2018**      Innovation Masters and Doctoral Fellowship for non-South African Students (National Research Foundation, South Africa) – **25K€**
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## Publications

- 2020**      **Dilmahamod, A. F.**, P. Penven, B. Aguiar-González, C. J. C. Reason and J. C. Hermes (2020), A model investigation of the influences of the South-East Madagascar Current on the South-East Madagascar Bloom, *Journal of Geophysical Research: Oceans*, 125, e2019JC.015761. <https://doi.org/10.1029/2019JC015761>

- 2019 **Dilmahamod, A. F.**, P. Penven, B. Aguiar-González, C. J. C. Reason and J. C. Hermes (2019), A new definition of the South-East Madagascar Bloom and analysis of its variability, *Journal of Geophysical Research: Oceans*, 124, 1717-1735, <https://doi.org/10.1029/2018JC014582>. Cited: **3**.
- 2018 **Dilmahamod, A. F.**, B. Aguiar-González, P. Penven, C. J. C. Reason, W. P. M. De Ruijter, N. Malan and J.C. Hermes (2018), SIDDIES corridor: A major east-west pathway of long-lived surface and subsurface eddies in the subtropical South Indian Ocean, *Journal of Geophysical Research: Oceans*, 123, 5406-5425, <https://doi.org/10.1029/2018JC013828>. Cited: **11**.
- 2016 **Dilmahamod, A. F.**, J. C. Hermes and C. J. C. Reason (2016), Chlorophyll-a variability in the Seychelles–Chagos Thermocline Ridge: Analysis of a coupled biophysical model, *Journal of Marine Systems*, 154, 220-232, <http://dx.doi.org/10.1016/j.jmarsys.2015.10.011>. Cited: **13**.

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## Conference Presentations

- 2020 Bendinger, A., Karstensen, J., Le Sommer, J., Albert, A., **Dilmahamod, A. F.** Mesoscale eddy characteristics in the Labrador Sea from observations and a 1/6° numerical model, presented at *European Geophysical Union*, 2020 (Online Presentation).
- 2020 **Dilmahamod, A. F.**, Karstensen, J., Dietze, H., Löptien, U., Fennel, K. Generation of mesoscale eddies in the Eastern Tropical North Atlantic Ocean, presented at *Ocean Sciences Meeting*, 2020, San Diego, USA. (Oral)
- 2019 **Dilmahamod, A. F.**, Karstensen, J., Dietze, H., Löptien, U. Generation mechanisms of mesoscale eddies in the Tropical Atlantic Ocean off north-western Africa, presented at *European Geophysical Union*, 2019, Vienna, Austria. (PICO)
- 2018 **Dilmahamod, A. F.**, B. Aguiar-González, P. Penven, C. J. C. Reason, W. P. M. De Ruijter, N. Malan and J.C. Hermes. The SIDDIES corridor: A major pathway of long-lived surface and subsurface eddies in the subtropical South Indian Ocean, presented at *50<sup>th</sup> Liege Colloquium on Ocean Dynamics*, 2018, Liège, Belgium. (Oral)
- 2017 **Dilmahamod, A. F.**, Penven, P., B. Aguiar-González, C. J. C. Reason and J. C. Hermes. The South-east Madagascar phytoplankton bloom: A modelling perspective, presented at the *Tenth Western Indian Ocean Marine Science Association (WIOMSA) Scientific Symposium*, 2017, Dar es Salaam, Tanzania. (Oral)
- 2017 **Dilmahamod, A. F.**, B. Aguiar-González, P. Penven, C. J. C. Reason, W. P. M. De Ruijter, N. Malan and J.C. Hermes. The role of subsurface-intensified eddies in the southern Indian Ocean, presented at the *IAPSO-IAMAS-IAGA Joint Assembly*, 2017, Cape Town, South Africa. (Oral)
- 2016 **Dilmahamod, A. F.**, Penven, P., Reason, C. and Hermes, J. Investigating the regime of the South-West Indian Ocean through a high-resolution numerical model, presented at the *32<sup>nd</sup> Annual Conference of the South African Society for Atmospheric Sciences (SASA)*, 2016, Cape Town, South Africa. (Poster)

2016 **Dilmahamod, A. F.**, Penven, P., Reason, C. and Hermes, J. Investigating the termination regime of the East Madagascar Current and the influence of Southern Indian Ocean's westward-propagating eddies on the local currents, presented at the 48<sup>th</sup> Liege Colloquium: Submesoscale processes, 2016, Liège, Belgium. (Poster)

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### Teaching Experiences

2016 Teaching Assistant, *University of Cape Peninsula and Technology*, Cape Town, South Africa.

2015 – 2016 Teaching Assistant, *University of Cape Town, Cape Town*, South Africa.

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### Visiting Experiences

2018 – 2019 *Laboratory for Ocean Physics and Satellite remote sensing (LOPS)*, Brest, France – Dr. Pierrick Penven

2017 *Laboratory for Ocean Physics and Satellite remote sensing (LOPS)*, Brest, France – Dr. Pierrick Penven

2015 *L'Institut Français de Recherche pour l'Exploitation de la Mer (IFREMER)*, Brest, France – Dr. Pierrick Penven.

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### Scientific Cruises

2019 *REEBUS (Role of eddies in the carbon pump of eastern boundary upwelling systems)* – Cape Verde to Cape Verde – RV Meteor (M156)

2016 *Madagascar Ridge Survey* – La Réunion to Madagascar – RV Antea

2015 *Agulhas System Climate Array (ASCA)* – Cape Town to Cape Town – RV Algoa

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### Research Expertise

- Experience with a range of ocean modelling system including ROMS-CROCO (running), PISCES (running), NEMO (research) and MOM (research)
  - Experience with a range of observational data including satellite and in-situ data, as well as eddy tracking algorithms and datasets
  - Working experience with synthetic Lagrangian Particle tracking techniques in ocean models (Ichtyop) for both dynamical and biological analysis.
  - Cruise experience handling a variety of oceanography equipment (CTD, ADCP, Microstructure, Glider and biogeochemical tracers sampling)
  - Excellent knowledge of scientific computing, including working on high performance computers, MATLAB and Python programming.
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### Research Services

**Manuscript Reviewer:** Scientific Reports (1), Progress in Oceanography (1), Frontiers in Marine Science (1), Journal of Geophysical Research – Oceans (1), Ocean Dynamics (1), Deep-Sea Research (1), Journal of Marine Systems (1).

**Committees:** *International Indian Ocean Expedition 2* – Early Career Scientist Network  
*Early Career Ocean Frontier Institute Researchers* – Postdoctoral Representative

**Memberships:** *The Oceanography Society (TOS)* – Since 2017  
*American Geophysical Union (AGU)* – Since 2018  
*Western Indian Ocean Marine Symposium (WIOMSA)* – Since 2018