

# **Postdoctoral fellowship on modelling the cross-shelf exchanges along the inshore edge of the Agulhas Current**

The Nansen-Tutu Centre for Marine Environmental Research (NTC) and the South African Environmental Observation Network (SAEON) are jointly offering a focussed Postdoctoral fellowship to develop a regional high resolution ocean model in order to study cross-shelf exchanges along the inshore edge of the Agulhas Current and understand its impact on the coast on a range of spatio-temporal scales.

The goal of this project is to set up and run numerical simulation experiments using a regional implementation of the Hybrid Coordinate Ocean Model, validate and calibrate the numerical model simulations against available satellite remote sensing and in situ measurements and then using both the numerical model and observational data, study the cross-shelf exchanges inshore of the Agulhas Current, including coastal interactions at a range of spatio-temporal scales. The core outcome is therefore the development and implementation of a regional high resolution implementation of the Hybrid Coordinate Ocean Model which will serve to advance our oceanographic understanding of the region, form the basis for an operational ocean forecasting system for South Africa's Exclusive Economic Zone and facilitate training of students.

**Postdoctoral Research Fellows (PDRFs)** are PhD graduates who are granted fellowships to conduct research under the mentorship of an established academic. The postdoc has the status of an academic-in-training. The purpose of the Postdoctoral Research Fellowship is to provide an opportunity for experiential learning in research, which may serve as a path for further academic and professional development.

## **Requirements (Criteria for eligibility)**

- A PhD (or PhD submitted for defence) in a relevant area (Oceanography, Engineering, Mathematics, Physics) and have an interest in numerical ocean modelling, western boundary current dynamics and cross-shelf interactions.
- Basic computer science and coding experience (e.g. Bash, Fortran, Matlab / Python) will be advantageous.
- Knowledge of working with the Hybrid Coordinate Ocean Model will be advantageous.
- Experience of working in a high performance computing environment.
- An understanding of western boundary current dynamics and shelf sea processes will be advantageous.
- An understanding of basic statistics for the processing of large datasets will be advantageous.

- Effective communication skills (oral, written and presentation).
- Proven ability to publish in international peer-reviewed journals.
- Be independent and able to work under pressure.

**Conditions of Award:**

1. The successful candidate must be in possession of a PhD within the past five years, or submitted their thesis for defence within the past six months in a relevant area (Oceanography, Engineering, Mathematics, Physics) and have an interest in numerical ocean modelling, western boundary current dynamics and cross-shelf interactions.
2. Only individuals who have achieved the doctoral degree within the past 5 years are eligible to apply.
3. Applicants may not previously have held full-time professional or academic positions.
4. The successful candidate may, as part of their professional development, be required to participate in departmental activities such as limited teaching and supervision and duties incidental thereto.
5. The successful incumbent will be required to comply with the University's approved policies, procedures and practices for the postdoctoral sector.
6. The candidate must be a South African citizen.

PDRFs who have been accepted by an academic department and who are supported by a postdoctoral fellowship, may be registered at UCT under the following conditions:

1. Compliance with the University's official definition, specifically in that the prospective Postdoctoral Fellow has achieved her/his PhD degree within 5 years of such registration
2. On condition that the prospective Postdoctoral Fellow has not previously held any permanent professional or academic positions
3. Individuals may register as PDRFs if they have submitted their PhD thesis for examination. However, registration is limited to 6 months, and registration will be cancelled thereafter unless proof of having obtained the doctoral degree is submitted.
4. The Postdoctoral Research Fellow is expected to conduct research under the leadership of a Principal Investigator (PI).
5. Depending on available funding the Postdoctoral Research Fellowship may be renewed for a second year. Thereafter, application for extensions up to a maximum of five years can be applied for. Renewal and extension depends on several factors, notably funding availability, but specifically on satisfactory academic progress.
6. The Postdoctoral Research Fellowship is limited to a tenure of one year. Depending on funding availability, it may be renewed for a second year and under exceptional conditions, be extended to a 3rd, 4th and even a 5th year. However, no postdoc may hold a fellowship for longer than 5 years in total. See No. 4 above.

PDRFs may undertake limited teaching and/or co-supervision of students, but these commitments may not exceed 12 hours per week.

### **Value and tenure**

The value of the fellowship is ZAR 240,000 per annum. No benefits or travel allowances are included in the value of the fellowship. The fellowship is tenable for 1 year with the possibility for renewal for a second year, dependent on performance.

### **Application process**

Applicants should provide the following:

- A letter of application describing their academic interests, as stated above in “Conditions of Award”
- Certified copies of academic transcripts and evidence of having graduated with (or submitted for) the PhD degree
- A CV including any publications or research output;
- The names and contact details of 3 academics/referees.

**Applications will be accepted until 30 November 2017.** Only shortlisted candidates will be contacted.

The University of Cape Town reserves the right to cancel incomplete applications, to effect changes to the conditions of the Fellowship and/or to make no awards at all.

Further information can be obtained from, and applications submitted to, Dr Bjorn Backeberg ([BBackeberg@csir.co.za](mailto:BBackeberg@csir.co.za), Tel +27 21 888 2533) or Dr Juliet Hermes ([juliet@saeon.ac.za](mailto:juliet@saeon.ac.za), Tel +27 21 402 3118).