# Postdoctoral Fellowship – CSOF4

Role summary for potential applicants

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| Advertised Job Title**:** | Postdoctoral Fellowship in Mixed Layer Dynamics in the Warm Pool |
| Reference Number**:** | 43001 |
| Classification**:** | CSOF4 |
| Salary Range: | AU $78K to AU $88K plus up to 15.4% superannuation |
| Location**:** | Perth, WA |
| Tenure: | Specified Term of 3 years |
| Relocation assistance**:** | Will be provided to the successful candidate if required. |
| Applications are open to: | Australian Citizens Only  Australian Citizens and Permanent Residents Only   * All Candidates |
| Functional Area**:** | Research Scientist / Engineer - Postdoc |
| % Client Focus - Internal: | 5% |
| % Client Focus - External: | 95% |
| Reports to the: | Principal Research Scientist |
| Number of Direct Reports: | 0 |

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| **Role Overview:** |
| This position arises from establishment of Centre for Southern Hemisphere Ocean Research (CSHOR), which is a joint initiative between the Qingdao National Laboratory for Marine Science (China), CSIRO, University of New South Wales (UNSW) and University of Tasmania (UTAS). The CSHOR objective is to increase investment in ocean-climate research in order to improve our understanding of how the southern hemisphere oceans influence global and regional climate, and how the climate influences these oceans. The position will based in CSIRO, to work on one of many projects funded by CSHOR, to study dynamics of ENSO and the IOD, their impacts, and their response to climate change.  **Postdoctoral Fellowships** at CSIRO provide opportunities to scientists and engineers, who have completed their doctorate and have less than three years relevant postdoctoral work experience. These fellowships will help launch their careers, provide experience that will enhance their career prospects, and facilitate the recruitment and development of potential leaders for CSIRO.  Postdoctoral Fellows **are appointed for up to three years** and will work closely with a leading Research Scientist or Engineer in their respective field. They carry out innovative, impactful research of strategic importance to CSIRO with the possibility of novel and important scientific outcomes. They present the findings in appropriate publications and at conferences.  The research is aimed at carrying out in situ observations of upper ocean dynamics in the eastern Indian Ocean warm pool region, using a novel combination of robotic (and potentially expendable) platforms on time scales from diurnal cycles to intraseasonal oscillations. Coupled climate model simulations will be evaluated against the observations to identify model sensitivity to the diurnal warming events and their effects on intraseasonal oscillation and ENSO simulation and prediction. The goal is to use the observation/model comparisons, as well as sensitively experiments in the coupled system to quantify the impact of the fast coupling or upper ocean mixing rates on the simulated diurnal cycle, intraseasonal oscillations, and ENSO evolution. |

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| **Duties and Key Result Areas:** |
| * Under the supervision of senior research scientists, Dr Ming Feng, Dr Susan Wijffels, and Dr Harry Hendon, carry out innovative, impactful research of strategic importance to CSIRO that will, where possible, lead to novel and important scientific outcomes. * Help design and carry out field observations using robotic platforms, perform quality control of the acquired data streams, and deliver high impact research on mixed layer dynamics in the eastern Indian Ocean warm pool. * Evaluate coupled model performances against the observations and assess model sensitivity to diurnal ocean warming in terms of simulation of intraseasonal oscillations. * Produce high quality scientific papers suitable for publication in peer-reviewed journals and present your work at scientific conferences. * Contribute to the development of innovative concepts and ideas for further research. * Make a contribution to the effective functioning of the research team and help deliver CSIRO’s organisational objectives and plans. * Work collaboratively with colleagues within your team, the business unit and across CSIRO. * Communicate effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation. * Adhere to the spirit and practice of CSIRO’s Values, Health, Safety and Environment plans and policies, Diversity initiatives and Zero Harm goals. * Undertake an appropriate training and development program developed by CSIRO. * Other duties as directed.   ***CSIRO’s postdoctoral training program***is developed between the Postdoctoral Fellow and a CSIRO scientist. The program will focus on enhancing the Fellows’ capabilities to the level expected of an independent researcher and will include on-the-job and course-based development encompassing:   * Discipline-specific techniques and protocols * Professional growth * Project management * Communication and influencing skills * Working and collaborating with others   <http://www.csiro.au/Portals/Careers/Postdoctoral-Fellowships/Postdoctoral-Fellowships.aspx> |

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| **Selection Criteria:** |
| *Under CSIRO policy only those who meet all essential criteria can be appointed*  ***Pre-Requisites:***   1. **Education/Qualifications:** A doctorate (or will shortly satisfy the requirements of a PhD) in a relevant discipline area, such as physical oceanography or climate science, with a strong background or substantial experience in the ocean observations and/or model results.   ***Please note:*** *To be eligible for this role you must have* ***no more than 3 years*** *of relevant full time postdoctoral experience.*   1. **Communication: High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including at national and international conferences.** 2. **Publications: A record of publications in quality, peer reviewed journals.** 3. **Behaviours:** A history of professional and respectful behaviours and attitudes in a collaborative environment.   ***Essential Criteria:***   1. **Demonstrated understanding of the ocean’s role in coupled ocean-atmosphere processes and ocean mixed layer dynamics.** 2. **Demonstrated experience with computational and statistical methods of climate science and oceanography, in particular the ability to synthesize diverse data sets to aid interpretation and draw conclusions.** 3. **Capacity to carry out original, independent, and innovative research with a minimum of direct supervision.** 4. **Sophisticated programming skills to analyse model data sets and compare them rigorously to observations.** 5. **High level written and oral communication skills with the ability to represent the research team effectively internally and externally, including at national and international conferences and as evidenced by a record of publications in quality, peer reviewed journals**   **Desirable Criteria:**   1. **Familiarity with the output of coupled ocean-atmosphere models, and experience and knowledge of coupled ocean-atmosphere processes** 2. **Knowledge and past experience with upper ocean/surface atmospheric observations and/or air-sea flux products**   **CSIRO Values:**  As Australia’s Innovation Catalyst, CSIRO has strategic actions underpinned by behaviours aligned to Excellent science, Inclusion, Trust & Respect, Health, Safety & Environment and Deliver on commitments.  In your application and at interview you will need to demonstrate alignment with these behaviours.  **Eligibility:**  To be appointed as a Postdoctoral Fellow within CSIRO, candidates are required to have **submitted** their PhD at the time of commencement, as a minimum requirement, if PhD conferment has not been obtained. If a candidate has submitted, but their PhD has not yet been formally attained, the starting salary will be CSOF4-1 ($78,479)*.* Upon CSIRO receiving written confirmation that the PhD has been awarded (within a six month period from commencement date), the salary will be increased to the negotiated level and the difference will be back-paid to the Officer’s start date.  ***Other special requirements:***  *Appointment to this role may be subject to conditions including security/medical/character clearance requirements. Applicants who are not Australian Citizens or Permanent Residents may be required to undergo additional security clearance processes; which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).-* [*http://www.ielts.org/default.aspx*](http://www.ielts.org/default.aspx) |

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| **Other Information:** |
| **How to Apply**  Please apply for this position online at [www.csiro.au/careers](http://www.csiro.au/careers). You may be asked to provide additional information (online) relevant to the selection criteria. If so, then responding will enhance your application so please take the time to provide relevant succinct answers. Applicants who do not provide the information when requested may not be considered.  If you experience difficulties applying online call 1300 301 509 and someone will be able to assist you. Outside business hours please email: [csiro-careers@csiro.au](mailto:csiro-careers@csiro.au).  **Referees**: If you do not already have the names and contact details of two previous supervisors or academic/ professional referees included in your resume/CV please add these before uploading your CV.  **Contact:** If after reading the selection documentation you require further information please contact:  Dr Ming Fengvia email: Ming.Feng@csiro.au or phone: +61 8 9333 6512  Please do not email your application directly to Dr Feng. Applications received via this method will not be considered.  **About CSIRO**  Australia is founding its future on science and innovation. Its national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) is a powerhouse of ideas, technologies and skills for building prosperity, growth, health and sustainability. It serves governments, industries, business and communities across the nation.  Find out more! [www.csiro.au](http://www.csiro.au).  **CSIRO Oceans and Atmosphere**  CSIRO’s Ocean and Atmosphere is uniquely placed to deliver significant economic, social and environmental benefits for Australia and the region. We seek to secure Australia’s future through our seas and skies.  **What CSIRO offers you**  Together the CSIRO and the Bureau of Meteorology comprise the largest team of bluewater oceanographers and climate scientists in Australia. This team is renowned for ocean and atmospheric observations and research, as well as oceanography and coupled ocean-atmosphere modelling. You will benefit from direct access to this broad expertise reaching across observations through to climate modelling. In addition there is a large peer group of Ph. D. students and postdoctoral researchers to enrich you experience, including interactions with the large body of researchers contributing to the Australian Research Council’s Climate System Science Centre of Excellence. The CSIRO/BoM team has extensive international collaborations that you can build on. We routinely organize and participate in numerous international workshops and symposia, and host many international visitors. In addition, there will be opportunity for you to participate in field work, gaining precious insight into ocean data collection. In our work we will target publication in high impact journals, for which we have an excellent success rate. The team has a high diversity across gender and race, and supports a flexible family-friendly workplace.  Perth is a beautiful capital city on the west coast of Australia. It has a vibrant cultures and great sceneries. The CSIRO lab in Perth is located on the University of Western Australia campus, within the Indian Ocean Marine Research Centre. |