# Position Details

## Research Scientist/Engineer- CSOF5

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| The following information is for applicants |
| Advertised Job Title | Research Scientist – Regional Climate Model Developer |
| Job Reference | 78362 |
| Tenure | Specified Term of 3 years commencing no earlier than March 2022 |
| Salary Range | AU$102k to AU$111k pa (pro-rata for part-time) + up to 15.4% superannuation |
| Location(s) | Hobart Tas, Melbourne (Aspendale) Vic or Canberra ACT |
| Relocation Assistance | Will be provided to the successful candidate if required |
| Applications are open to | * All Candidates
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| Position reports to the | Team leader of Extreme Weather and Climate |
| Client Focus – Internal | 0% |
| Client Focus – External | 100% |
| Number of Direct Reports | 0 |
| Enquire about this job | Contact Marcus Thatcher via email at marcus.thatcher@csiro.au or phone +61 3 9239 4540 |
| How to apply | Apply online at <https://jobs.csiro.au/> Internal applicants please apply via **Jobs Central**If you experience difficulties when applying, please email careers.online@csiro.au or call 1300 984 220. |

### Role Overview

The role of Research Scientist Staff in CSIRO is to conduct innovative research leading to scientific achievements that are aligned with CSIRO’s strategies. You may be engaged in scientific activity ranging from fundamental research to the investigation of specific industry or community problems. You will have the opportunity to build and maintain networks, play a lead role in securing project funds, provide scientific leadership and pursue new ideas and approaches that create new concepts.

The Research Scientist – Regional Climate Model Developer will join the CSIRO Climate Science Centre in the Ocean and Atmosphere Business Unit. The role will contribute to the development, maintenance, and evaluation of the Conformal Cubic Atmospheric Model (CCAM) regional climate model used to make climate change projections for Australia. CCAM is a variable resolution global climate model that has been developed in Australia for applied climate and weather applications. This position will help to progress CCAM’s independent set of scale-aware atmospheric physics parameterisations, to ensure that they are consistent with best practice for modelling changes in regional climate and extreme weather. The regional climate change projections produced from CCAM simulations will be part of a multi-model ensemble delivering to the Australian Climate Service (ACS), as well as delivering to international intercomparison experiments such as the Coordinated Regional Climate Downscaling Experiment (CORDEX). The position will require development, coding and writing publications about CCAM and its performance, as well as providing specialised products for the ACS.

### Duties and Key Result Areas

* Develop CCAM atmospheric physics parameterisations for improving the representation of changes in Australian climate and extreme weather over multi-decadal timescales.
* Under limited direction, assist in the planning and preparation of CCAM experiments and carry out research investigations, requiring originality, creativity, and innovation.
* Develop CCAM experiment design for ensembles of national regional climate simulations consistent with international best practice.
* Program CCAM source code in Fortran and Python for use on National Computing Infrastructure (NCI), Pawsey Supercomputing Centre and CSIRO High Performance Computing facilities. Work with version control and issue tracking software.
* Help with the management of large datasets in NetCDF format, following Climate Model Intercomparison Project (CMIP) conventions.
* Present CCAM results in a meaningful format, prepare reports for clients and/or write scientific papers for publication. Describe CCAM development at conferences and workshops.
* Contribute to the building of collaborative networks within the CCAM community, as well as with other modelling teams within CSIRO and with partner institutions including the Bureau of Meteorology and Universities.
* Address problems promptly and in a constructive manner, selecting the most profitable lines of attack upon a problem, preparing detailed design proposals and experimental protocols.
* Draw on professional expertise, knowledge of other disciplines and research experience, recognise opportunities for innovation and generate new theoretical perspectives by pursuing new ideas/approaches and networking with scientific colleagues across a range of disciplines.
* Maintain confidentiality when working with commercially sensitive information.
* Communicate openly, effectively and respectfully with all staff, clients and suppliers in the interests of good business practice, collaboration and enhancement of CSIRO’s reputation.
* Work collaboratively as part of a multi-disciplinary, regionally dispersed research team to carry out tasks in support of CSIRO’s scientific objectives.
* Adhere to the spirit and practice of CSIRO’s Values, Code of Conduct, Health, Safety and Environment procedures and policy, Diversity initiatives and Making Safety Personal goals.
* Other duties as directed.

## **Required Competencies**

* **Teamwork and Collaboration:** Cooperates with others to achieve organisational objectives and may share team resources in order to do this. Collaborates with other teams as well as industry colleagues.
* **Influence and Communication:** Uses knowledge of other party's priorities and adapts presentations or discussions to appeal to the interests and level of the audience. Anticipates and prepares for others reactions.
* **Resource Management/Leadership:** Allocates activities, directs tasks and manages resources to meet objectives. Provides coaching and on the job training, recognises and supports staff achievements and fosters open communication in the team.
* **Judgement and Problem Solving:** Investigates underlying issues of complex and ill-defined problems and develops appropriate responses by adapting/creating and testing alternative solutions.
* **Independence:** Plans, sets and works to meet challenging standards and goals for self and/or others. Recognises where endeavours will make the most impact or difference, decides on desired outcome and sets realistic goals to reach this target.
* **Adaptability:**Copes with ambiguity or situations that lack clarity. Adapts readily to changing circumstances and new responsibilities (which may include activities outside own preferences) in the interests of achieving team objectives. Recognises the need for and undertakes personal development as a result of change.

## **Selection Criteria**

#### Essential

*Under CSIRO policy only those who meet all essential criteria can be appointed.*

1. A PhD (or an equivalent combination of qualifications and research experience) in a relevant field such as Climate science, Earth sciences, Physics or Mathematics.
2. Demonstrated experience developing atmospheric models, land-surface models or related physical process modelling for climate and weather simulations.
3. Programming experience with Fortran and Python.
4. A history of working effectively as part of a multi-disciplinary, regionally dispersed project team, plus the motivation and discipline to carry out autonomous research.
5. Demonstrated ability to undertake original, creative and innovative research by generating and pursuing novel ideas and solutions to scientific research problems.
6. Excellent oral and written communication skills including the ability to prepare and deliver conference presentations.
7. A demonstrated publication history of authorship on scientific papers in peer reviewed journals and/or reports, grant applications or inventorship on patent applications.

## **Desirable**

1. Experience using supercomputers such as with the National Computing Infrastructure or Pawsey Supercomputing Centre.
2. Programming with Message Passing Interface, OpenMP and NetCDF.
3. Experience conducting regional climate simulations.
4. Familiar with version control and bug tracking software.

Special Requirements

Appointment to this role may be subject to conditions including provision of a national police check as well as other security/medical/character clearance requirements.

* The start date for this position will be no earlier than March 2022.
* The successful candidate will be asked to obtain and provide evidence of a National Police Check or equivalent. Please note that people with criminal records are not automatically deemed ineligible. Each application will be considered on its merits.
* If the successful candidate is not an Australian Citizen or Permanent Resident, they may be required to undergo additional security clearances, which may include medical examinations and an international standardised test of English language proficiency (i.e. IELTS test).- https://ielts.com.au/

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* 1. People First
	2. Further Together
	3. Making it Real
	4. Trusted

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