Postdoctoral fellowship in quality assessment of Arctic climate data available at UCL, Louvain-la-Neuve (Belgium)

Keywords

Copernicus, climate change, product quality assessment, climate services, sea ice, Arctic

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Introduction

The Georges Lemaître Centre for Earth and Climate Research (TECLIM; www.uclouvain.be/teclim) / Earth and Life Institute of the Université catholique de Louvain (UCL), Louvain-la-Neuve, Belgium is seeking a postdoctoral fellow for participation to the Copernicus EU funded project SQUARE4ECVs (Scientific Quality Assessment and Report for Essential Climatic Variables). SQUARE4ECVs is a 5 M€, 4-year project lead by the Consiglio Nazionale delle Ricerche (CNR, Italy), that aims at providing scientific support for the quality assessment of key Essential Climate Variables (ECVs) to be hosted on the Copernicus Climate Data Store (https://climate.copernicus.eu/climate-data-store).

Background

There is an ever-increasing demand for actionable information to support decision making in the face of a changing climate. Like many other disciplines, climate science is flooded under a deluge of data. A distributed Climate Data Store (CDS) is currently being set up within the Copernicus Climate Change Service (C3S, https://climate.copernicus.eu/) to meet the increasing demand for accessing climate data. To ensure reliable and informed access to the data, a number of service contracts have been awarded to European consortia (made up of research centres, institutions, universities), in order to provide the scientific support going along the publication of upcoming datasets. The final decision to add specific essential climate variables (ECV) products to the CDS will be guided by the demand, but also by the scientific integrity and traceability of the products.

SQUARE4ECVs is one of the successful consortia. It will provide the scientific and technical basis for robust and sustained quality assessment of all observational and reanalysis-based ECVs that will eventually populate the Copernicus CDS. More specifically, a set of consolidated quality functions will be implemented to assess (i) the maturity of data records and their compliance with Global Climate Observing System (GCOS) standards and (ii) the adequacy of the datasets for specific use cases (trend detection, characterization of extreme events, climate model evaluation). Quality Briefs will be systematically published with the goal

to inform future users on strengths, but also limitations and weaknesses of the product they will be about to use. Due to the anticipated large number of reports to be delivered, the community Earth System Model eVALuation Tool (ESMValTool, http://www.esmvaltool.org) will be used to systematize the assessments and support expert judgement.

Specific tasks

The successful candidate will work on three main fronts. First, he/she will be in charge of (jointly) developing the technical solution proposed by SQUARE4ECVs. In particular, the candidate will augment the capabilities of ESMValTool to check the consistency, provenance, meta-data and specification of uncertainty of products submitted on the CDS. This task will be done in close collaboration with SQUARE4ECVs partners. Second, the candidate will be in charge of assessing sea ice related products to be published on the CDS, using the tools developed in the first task. Finally, the candidate will produce a comprehensive quantification of the Arctic freshwater cycle using the data from the CDS and study the associated shifts as a response to climate changes. He/she will also deliver informed judgment on the adequacy of today's reanalyses and observations to understand this cycle, its mean state and variability.

Profile and position

The successful candidate should have a PhD in climate science, oceanography, meteorology, remote sensing or equivalent. A background in cryospheric sciences is a strong plus. He/she should have sufficient technical skills to quickly apprehend, run and modify community computed codes such as ESMValTool. Knowledge of version control systems such as GIT is a plus. Besides, he/she should be familiar with best practices in climate science regarding data standards (CF, GCOS). He/she should be fluent in English, be used to work in a collaborative environment (which implies frequent attendance to teleconferences, workshops, project meetings).

The position is offered for 20 months with a possibility of extension. The salary will be commensurate with experience according to UCL rates. The position guarantees good exposure to the climate and operational communities, and a critical role in the emerging project Copernicus that will shape access to climate data for the next decade(s).

Submission process

Applicants should send (i) a statement of research experience, qualification and interest, (ii) a complete CV, and (iii) two letters of recommendation, as **one PDF file** via e-mail to Dr. François Massonnet (francois.massonnet@uclouvain.be). Expected date for entry on duty: as soon as possible. The position is open until filled.