

Effective visualisations of Martian climate simulations

Code: 21/04

Company: The Open University

Location: The Open University, Milton Keynes

Company Description:

The Open University is an internationally recognised research leader in planetary and space sciences and the development of space instrumentation. Covering a wide range of disciplines from astrobiology to electrical engineering, geochemistry to quantum physics; and technologies from electronic imaging to remote sensing, mass spectroscopy to novel sensors; Open University researchers are often found in key roles in international space science missions such as Rosetta, ExoMars, Euclid, JUICE and Athena; with much of the activities performed in collaboration with Space Agencies, Universities and companies around the World. This research also informs our world-leading teaching in the Physical Sciences, Engineering and Earth and Environmental Sciences

Project Description:

As climate models output datasets of larger and larger size, it has become imperative to create effective visualisations of model data in order to generate insight into climate processes. The atmospheric modelling group at the Open University uses a leading Mars global climate model (MGCM) to simulate martian weather and climate, and have produced an extensive multi-year database of climate model output that is now available for analysis and interpretation. The proposed project will explore innovative ways of visualising and exploring this dataset, by contributing towards the creation of a web interface that enables users to interact with the data dynamically to identify trends and patterns. The successful candidate will have an exciting opportunity to explore the interface between cutting edge simulation and visualisation software. No prior knowledge of atmospheric science is necessary.

Applicant Specification:

Project holder responsibilities:

1. Develop a web-based tool to visualise and interact with MGCM output
2. Learn to process and summarise data from a climate model
3. Document progress and results in an appropriate way

The project offers the applicant:

- The chance work alongside planetary scientists and a space flight team

- An opportunity to develop skills relating to the processing and analysis of large datasets
- The development of programming skills in Python and JavaScript

Person specification:

- Studying for a degree in Physics, Computing, Maths or a related field.
- Knowledge of computer programming, for example Python or MATLAB
- Knowledge of web development desirable (e.g. HTML, Javascript)
- Confident using Microsoft Office
- Work well in a group / good team working and inter-personal skills
- Able to plan individual workload

Further details:

8 weeks minimum fixed term contract to be agreed with successful candidate but nominally with a start date around June 2021 to attend the SPIN Induction day hosted by the Satellite Applications Catapult, and completion before September 2021 for the Showcase that month. Salary is £1,500 per calendar month gross.

Closing Date for Applications: 5pm on Friday 29 January 2021

Applications should be made through the online form attaching a CV, before the closing date. Please note that elements of the form left incomplete will be deemed to render the application ineligible. They will be checked for eligibility and forwarded to the employer.