RHUM-RUM: Imaging a mantle plume under the hotspot of La Réunion

Fact Sheet

Project Information

RHUM-RUM

Grant agreement ID: 631104

Project closed

Start date
1 October 2014

End date
2 April 2019

Funded under
Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Total cost
€ 100 000,00

EU contribution
€ 100 000,00

Coordinated by
THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD
United Kingdom

Objective

RHUM-RUM is a seismological experiment designed to image an oceanic mantle plume – or lack of plume – from crust to core beneath La Réunion Island, and to understand these results in terms of material and heat flows. The Réunion hotspot is

one of the most active volcanoes in the world, and its hotspot track leads to the Deccan Traps of India, one of the largest flood basalt provinces on Earth, which erupted 65 Ma ago. The genesis and the origin at depth of this mantle upwelling are controversial, and La Réunion stands exemplarily for the entire class of hotspot-type volcanism that occurs mostly in the world's oceans, far removed from plate boundaries. It remains unclear whether oceanic hotspots are fed by deep mantle plumes, and whether plumes are significant contributors to the solid earth's heat budget.

Since 2011, we have deployed 57 broadband seismometers on the ocean floor, complemented by 37 seismic stations on the surrounding land masses of Madagascar, Mauritius, the Seychelles, and the Iles Eparses. RHUM-RUM is a French-German cooperative effort that pools the marine resources, funding, scientific expertise, and local infrastructure needed to realise this large experiment. Thus RHUM-RUM has become the largest effort worldwide to image a plume under an oceanic hotspot.

As the German PI of RHUM-RUM, I am in danger of losing previously raised German funding for the data analysis stage, as I am about to move from Munich to Oxford. The Career Integration Grant can help me facilitate the mobility of a postdoctoral associate and a PhD student to enable the close collaboration and supervision originally intended. My research project will use the most advanced methods of waveform tomography – several of which were developed by me and my group – to turn the RHUM-RUM waveform data set into 3-D body-wave tomographies that image through the entire mantle column under La Réunion, in order to shed light on the hotspot’s long-lived heat source.

Fields of science (EuroSciVoc)

natural sciences > computer and information sciences > **data science**

natural sciences > earth and related environmental sciences > geology > **volcanology**

natural sciences > earth and related environmental sciences > geology > **seismology**

Programme(s)

FP7-PEOPLE - Specific programme "People" implementing the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007 to 2013)

Topic(s)

FP7-PEOPLE-2013-CIG - Marie-Curie Action: "Career Integration Grants"

Call for proposal

FP7-PEOPLE-2013-CIG
See other projects for this call

Funding Scheme

MC-CIG - Support for training and career development of researcher (CIG)

Coordinator

THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF OXFORD

EU contribution

€ 100 000,00

Total cost

No data

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Region

South East (England) > Berkshire, Buckinghamshire and Oxfordshire > Oxfordshire

Activity type

Higher or Secondary Education Establishments

Links

Contact the organisation Website
Participation in EU R&I programmes
HORIZON collaboration network

Last update: 23 February 2022