

INFORMATION FOR CANDIDATES

for appointment as

Postdoctoral Fellow in Space Physics
(Fixed-term – Two and a Half Years)

DEPARTMENT OF PHYSICS

PRIME FUNCTION

Development and validation of a model as part of a New Zealand Ministry of Business Innovation and Employment Hazard Fund research project, under the direction of Professor Craig Rodger in the Department's Space Physics research group. The project is to investigate the hazard posed by geomagnetically induced currents to the New Zealand electrical transmission network. The successful candidate will build a model to describe geomagnetically induced currents in the New Zealand network. More than 10 years of experimental geomagnetically induced current measurements are available to validate the model, after which the candidate will apply it to investigate the risk posed by extreme geomagnetic storms. The Postdoctoral Fellow will work closely alongside two Otago MSc students, collaborating with other researchers from New Zealand and Europe.

More information on the project can be found here: <http://tinyurl.com/qzfdmfs>

KEY TASKS

- Develop a model to describe geomagnetically induced currents in New Zealand.
- Undertake data analysis on the observed geomagnetically induced currents and validate model.
- Determine the geomagnetically induced current hazard in New Zealand during extreme geomagnetic storms.
- Assist in the development of graduate student skills.
- Participate in Space Physics group activities.
- Maintain effective collaborative working relationships with other project staff.

RELATIONSHIPS

Ultimately responsible to: Head of the Physics Department
Supervised by: Professor Craig Rodger
Functional relationships: Collaborate with staff and students in the Space Physics Research Group
Maintain working relationships with general and technical staff in the Physics Department
Actively develop working relationships with graduate students in the Space Physics Group

BUDGETARY RESPONSIBILITY

Purchases over an agreed limit are to be authorised by supervisor.

EXPECTED OUTCOMES

- Regular collaborative contributions as part of a diverse research team.
- Regular and comprehensive liaison with supervisor.
- Reports on research results written clearly, comprehensively and on time.
- Visits to field sites, possibly including overseas installations (e.g., Antarctica).

PERSON SPECIFICATION

Applicants should have a doctorate in physics (with a demonstrated strength in one of the areas of Space Physics, Ionospheric Physics, Geomagnetism, Space Weather and/or Geophysics), be highly motivated, and have excellent interpersonal communication skills. The ideal candidate would have experience in research in geomagnetically induced current, a combination of experimental and theoretical skills, and be very well versed in Matlab.