



MINISTERIO
DE ECONOMÍA
Y COMPETITIVIDAD



1- **PhD Scholarship in numerical modelling of volcano deformation** within the framework of the research project:

Geologic and geodetic data integration for interpreting magmatic deformation and related hazards in Canary Islands: numerical modelling

Official project title in Spanish:

Integración de datos geológicos y geodésicos para la interpretación de deformaciones magmáticas y riesgos asociados en las Islas Canarias: Modelización numérica (CGL2014-58821-C2-1-R)

A geoscience project has been funded by the Spanish Ministry of Economy and Competitiveness. Applications are invited for a PhD scholarship in the Geosciences Institute-IGEO (Spanish National Research Council and Complutense University of Madrid). The successful candidate will work under the supervision of Dr. María Charco and Dr. Ana M. Negredo. The research focus will be the development of novel **physics-based models of fluid-rock interaction** to understand the coupling between the fluid flow and crustal deformation at volcanic areas.

The observed deformation in volcanic areas is the surface expression of the dynamic sources acting within the Earth. Kinematic models are commonly used to study properties of the volcanic systems by using geodetic observations (deformation data). These models do not explicitly include magmatic processes (e.g., magma migration, geochemical changes) or the way that such processes give rise to observable fields. As a result they are not well-suited for constraint by diverse time-evolving data sets and cannot be used to directly estimate most properties of the magma in the system.

The **PhD project will address** this question by using and further developing: 1) numerical modeling of 3D volcano deformation; 2) numerical modeling of fluid flow in volcanic conditions; 3) evolution of ground deformation with time considering interactions of the magma with the surrounding host rock; and 4) qualitative and quantitative interpretation of geodetic data to deeper understanding of volcano behavior.

The position is available for up to four years. The annual salary will be in accordance with Spanish Ministry of Economy and Competitiveness Agreement on behalf of Predoctoral Fellows programs. We seek for a PhD candidate with a strong physical-mathematical background. Previous knowledge in Earth sciences and scientific computation is recommended.

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The **call for candidates is currently open and will close on June 29 th, 2015 at 15:00 GMT**. Further information can be found at www.idi.mineco.gob.es.