University of Edinburgh researchers are monitoring volcanoes

University of Edinburgh scientists are monitoring one of the world's most active volcanoes to study the link between earthquakes and eruptions.

They are tracking the seismic activity on Isabela Island in the Pacific Ocean – which is releasing violent flows of lava – to find out how one earthquake can cause others and may ultimately trigger volcanic activity.

Researchers claim that studying the Sierra Negra volcano in the Galapagos Islands will help improve forecasts for earthquakes and eruptions.

The amount of molten rock inside the volcano – called magma – increased in recent months, causing its surface to rise by more than one metre and triggering thousands of tiny

earthquakes. This was apparently an indication that an imminent eruption was possible.

The recent activity had also critically stressed rocks that form the volcano's outer structure. This led to small tremors being triggered by distant earthquakes in a volatile region – called the Pacific Ring of Fire – which accounts for 90 per cent of all seismic activity.

A team from the University of Edinburgh's School of GeoSciences set up 14 seismometers to monitor Sierra Negra's activity prior to eruption during a visit to Isabela Island in April.

Data captured by the instruments will allow researchers to study interactions between local tremors triggered by the build-up and release of magma and those caused by distant earthquakes. This will help them identify key factors that influence how and when a volcano could erupt.

The team plans to return to the island later this year, and again in 2019, to complete its study. They are currently working closely with Ecuador's national geophysical institute to monitor changes in the ongoing eruption.

The project is funded by Natural Environment Research Council and supported by the Galápagos National Park. It involves researchers from the Dublin Institute for Advanced Studies, Ireland, and the Instituto Geofisico at the Escuela Politecnica Nacional, Ecuador.

Dr Andrew Bell, of the University of Edinburgh's School of GeoSciences, who is leading the project, said: "Sierra Negra is providing us with an exciting natural laboratory to study the complex interplay between earthquakes and volcanoes approaching eruption. A better understanding of these processes will help improve forecasts."