

# 火山災害潛勢評估及觀測技術強化 (3/4)

## Potential Assessment and Observation Technology Enhancement of Volcanic Hazards (3/4)

主管單位：經濟部中央地質調查所

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### 摘要

本計畫投入臺灣北部火山活動徵兆監測工作，以瞭解臺灣北部大屯火山群及龜山島火山岩漿庫或熱液活動，作為火山災害潛勢評估及火山防救災政策制定依據。內容包括火山微震、地球化學、地表變形監測及地球物理探測等。綜合 111 年各項監測資料，與往年相較，大屯火山區與龜山島之火山活動仍處於穩定狀態。此外，111 年完成之磺嘴及竹子山火山亞群火山災害潛勢圖資，可供各機關火山災害防救計畫後續運用。大屯火山地區二連續測站之自然電位長期變化可作為火山地區熱液活動之觀察標的。以 2022 年群震事件紀錄對比其對應時段的自然電位功率譜比值變化為例，在群震發生前後，經常出現低頻段功率譜比值變異。馬槽地熱區之近地表電性構造特性顯示，在馬槽地熱區噴氣孔下方的極低電阻率分布零散，代表馬槽地熱區地下缺乏類似於大油坑的集中型裂隙系統發育。

**關鍵詞：**臺灣北部、火山監測、火山地質、火山災害

### Abstract

This project invests in monitoring the signs of volcanic activity in northern Taiwan to understand the Tatun Volcano Group and Guishan Island volcanic magma reservoir or hydrothermal activity in northern Taiwan, as a basis for volcanic disaster potential assessment and volcanic disaster prevention and relief policy formulation. The contents include volcanic microseismic activities, geochemistry, surface deformation monitoring, terrestrial spontaneous potential observation and geophysical detection, etc. Based on the monitoring data in 2022 and compared with previous years, the volcanic activity in the Tatun Volcanic Area and Guishan Island is still in a stable state. In addition, the volcanic hazard map of Mt. Huangzui and Mt. Zhuzi volcanic subgroups completed in 2022 can be used for subsequent use of volcanic disaster prevention and rescue plans of various agencies.

Taking the 2022 earthquake swarm event records and comparing the spontaneous

potential power spectrum ratio changes in the corresponding period as an example, before and after the swarm earthquakes, there are often variations in the low-frequency power spectrum ratio. The near-surface electrical structural characteristics of the Matsao geothermal area show that the extremely low resistivity distribution below the fumaroles in the Matsao geothermal area is scattered, which means that the underground of the Matsao geothermal area lacks a concentrated fracture system similar to the Dayoukeng fumarole.

**Keywords** : Tatun Volcano Group; Volcanic Monitoring; Volcanology; Volcanic Hazard Map