

of the Magnetic Field Mapping for On-Site Inspection Purposes: Lessons from Forward Modeling and Multilevel Field Surveys

Thursday, 22 June 2023 10:37 (1 minute)

The importance of characterizing the amplitude and spatial variation of the geophysical anomalies created by on-site inspection (OSI) relevant observables is well known. By understanding such characteristics, it is possible to design the different geophysical surveys and to realistically assess the capability of a certain OSI technique to detect a potential observable. As part of the Action Plan 2016-2019, the Provisional Technical Secretariat conducted a multi-component project that included the development of forward models to characterize the magnetic anomalies created by complex geometric bodies simulating different OSI-relevant observables. The models were generated using the GamField software package developed by the Italian National Institute for Geophysics and Vulcanology (INGV). As a follow up of this project, a series of multilevel surveys (ground, near surface and airborne) were conducted in 2022 over a relevant area in central Italy. This contribution presents the results from both the theoretical forward modeling effort as well as from the field surveys, and the conclusions reached regarding the potential use of the magnetic field mapping in an OSI context.

E-mail

Luis.gaya@gmail.com

Promotional text

A comprehensive analysis of the use of magnetic field mapping for OSI purposes.

Oral preference format

Primary author: Mr GAYA PIQUE, Luis (CTBTO Preparatory Commission)

Co-authors: ROWLANDS, Aled (CTBTO Preparatory Commission); Mr CHIAPPINI, Massimo (Istituto Nazionale di Geofisica e Vulcanologia (INGV)); NICOLOSI, Iacopo (Istituto Nazionale di Geofisica e Vulcanologia (INGV)); PIGNATELLI, Alessandro (Istituto Nazionale di Geofisica e Vulcanologia (INGV)); Mr LABAK, Peter (CTBTO Preparatory Commission); Ms KOIVISTO, Emilia (CTBTO Preparatory Commission)

Presenter: Mr GAYA PIQUE, Luis (CTBTO Preparatory Commission)

Session Classification: Lightning talks: P1.1, P3.3

Track Classification: Theme 3. Monitoring and On-Site Inspection Technologies and Techniques: T3.3 On-Site Inspection Techniques