

セッション口頭発表 | T2 [トピック] マグマソース・マグマ供給系から火山体形成・熱水変質まで

◆ EDI

📅 2025年9月14日(日) 9:15 ~ 11:45 🏢 口頭第6会場(E305)

[1oral601-08] T2 [トピック] マグマソース・マグマ供給系から火山体形成・熱水変質まで

座長: 齊藤 哲(愛媛大学)、江島 圭祐(山口大学創成科学研究科)、草野 有紀(産総研地質調査総合センター)

9:15 ~ 9:30

[T2-O-1] 水蒸気噴火を発生する火山下の難透水層試料の岩石・鉱物学的特徴—霧島硫黄山の例*草野 有紀¹、井村 匠²、古川 竜太¹、山元 孝広¹、石塚 吉浩¹、伊藤 順一¹、松島 喜雄¹、朝比奈 大輔¹、阪口 圭一¹ (1. 産総研地質調査総合センター、2. 山形大学)

キーワード：霧島硫黄山、難透水層、掘削、水蒸気噴火、低比抵抗層

Phreatic eruptions are often associated with the development of low-resistivity geological structures, known as cap rocks, within shallow hydrothermal systems. This study investigates such structures at Iwo-yama in the Kirishima volcanic group using electromagnetic resistivity surveys and core drilling. A borehole (GSJ24-KI-1) was drilled to a depth of 275 m at a site 550 m north of Iwo-yama, targeting low-resistivity zones indicative of hydrothermal alteration. The core composed of andesitic lava flows and pyroclastic deposits, which were previous volcanic edifice, lava flows from the Karakunidake volcano and the Karakunidake debris avalanche materials (Imura and Kobayashi, 2001, Geological map of Kirishima Volcano, Geological Survey of Japan), upward. Hydrothermal alteration was categorized into three zones: dark gray sulfuric alteration (above 30 m), gray clay-silicified alteration (30–275 m), and white clay-silicified alteration (below 120 m). Especially gray clay-silicified zones contain minerals such as cristobalite, quartz, pyrite, and smectite. Hydrothermal alteration was most intense in porous pyroclastic deposits, suggesting selective alteration due to acidic hydrothermal fluids. Dense lava flows likely acted as barriers, enhancing alteration efficiency beneath them. The resistivity structure obtained from geophysical surveys aligns well with laboratory measurements of core samples, confirming the presence of cap rock formations. Future work will focus on refining the alteration sequence and correlating it with physical properties to better interpret subsurface volcanic activity. This study was funded by the MEXT FY2024 project.