

ポスター | S2: 岩石-水相互作用 (スペシャルセッション)

2026年9月25日(金) 12:30 ~ 14:00 | ポスター (336, 340, 341号室)

S2: 岩石-水相互作用 (スペシャルセッション)

12:30 ~ 14:00

[S2P-06] グリーンランドイスア表成岩帯に産する超苦鉄質岩の蛇紋岩化履歴

*山尾 駿介¹、Allen Nutman²、中村 佳博³、外田 智千⁴、M. Satish- Kumar⁵ (1. 新潟大・院自然、2. ウーロンゴン大・理、3. 産業技術総合研究所、4. 極地研究所、5. 新潟大・理)

キーワード：水素同位体、イスア表成岩帯、蛇紋石

Serpentine minerals are important for reconstructing Archean water-rock interactions because they retain water in their crystal structures and may preserve information on the fluids involved in their formation. Ultramafic rocks from the Isua area, southwestern Greenland, are key materials for investigating water circulation and fluid activity on the early Earth. In this study, we examined the serpentinization history of Isua ultramafic rocks using mineral textures, μ XRF elemental mapping, mineral compositional analysis, TG-DTA analysis, and hydrogen isotope analysis. The studied samples show different degrees of olivine preservation and alteration textures. In olivine-bearing samples, serpentine occurs around and within relatively well-preserved olivine grains, whereas other samples show variations in remaining olivine and mineral textures. μ XRF mapping identified two types of serpentines with different elemental compositions, which may correspond to differences in mineral textures. TG-DTA analyses revealed a major DTG peak at approximately 700 to 770°C in all samples. In addition, differences in the dehydration behavior at 500 to 700°C were observed among the samples. These differences may reflect the contribution of secondary hydrous minerals and/or presence of low temperature serpentine minerals. Hydrogen isotope analyses show variations in δD values among the samples, suggesting different fluid conditions or fluid events at different stages. Some samples also show variations corresponding to serpentine occurrence. These results suggest that the Isua serpentinites may have experienced multiple stages of fluid activity. In particular, texturally distinct serpentine within olivine pseudomorphs and heterogeneous elemental distributions revealed by μ XRF mapping suggest that post-serpentinization alteration and/or carbonation may have proceeded heterogeneously.