

Poster presentation | R6: Plutonic rocks, volcanic rocks and subduction factory

📅 Fri. Sep 12, 2025 12:30 PM - 2:00 PM JST | Fri. Sep 12, 2025 3:30 AM - 5:00 AM UTC 🏢 Poster (Room No. 16)

## **R6: Plutonic rocks, volcanic rocks and subduction factory**

### **[R6-P-02] High-temperature Crustal Anatexis during Cretaceous Magmatism in the eastern North Kyushu Batholith: Evidence from cordierite-bearing granite**

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Keywords : North Kyushu batholiths、Kaho granite、Cordierite granite、High geothermal gradient、Low-P/T metamorphism

Understanding igneous activity along active continental margins provides critical insights into the evolution of continental crust. The Cretaceous North Kyushu Batholiths (NKB) were emplaced between 112 and 95 Ma, with granodiorite and granite representing the early and late stages of magmatism, respectively. In the eastern NKB, we identified a small stock of highly evolved cordierite-bearing granite (Crd granite). Petrographical and geochemical evidence suggests that the generation of the Crd granite magma was significantly influenced by pelitic rocks. The pre-Cretaceous geological units underlying the eastern NKB are thought to be associated with the Suo Belt or the Kuga Group; thereby, suggesting the Crd granite was originated from partial melting of those pelitic gneisses. This implies that the extensive magmatic activity in the NKB region induced a high geothermal gradient, which was sufficient to trigger partial melting in the mid-crustal levels.