

## 東南極中央ドローニングモードランドのテレーン区分と原岩形成場

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## Terrane divisions and tectonic setting of metamorphic protoliths in the central Dronning Maud Land, East Antarctica

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We have tried to clarify the metamorphic process and the timing of tectono-thermal events during the amalgamation of East and West Gondwana. With regard to the timing, SHRIMP U–Pb zircon age dating was applied to several types of high-grade metamorphic rocks in different areas of the central Dronning Maud Land (CDML). The zircon ages of ca. 522–525 Ma, 598–599 Ma, 640–650 Ma were obtained in Filchnerfjella, Hochlinfjellet and Schirmacher Hills, respectively, and the CL images of zircons analyzed are consistent with those formed during a high-temperature metamorphism (Baba et al., 2010; Baba et al., under review). These three sets of ages are interpreted to represent the periods that immediately followed the peak metamorphism. The dating results reveal an age gap of 120 Myr among the three areas, indicating different tectonothermal events. On the basis of the previous results of U–Pb zircon age dating (Bisnath et al., 2006; Jacobs et al., 1998, 2003a, 2003b; Paulsson & Austrheim, 2003; Baba et al., 2010), metamorphic basement in CDML can be divided into several domains from Gjelsvikfjella to Wohlthatmassiv. Our preliminary terrane division revealed that there are five domains: (1) Grenville-age metamorphism (ca. 1090 Ma) with igneous protolith crystallized at 1120–1100 Ma, (2) 530–520 Ma metamorphism with igneous protolith at 1150–1000 Ma, (3) 600 Ma metamorphism with detritus zircon of various ages (930, 780, 730Ma), (4) 570–550 Ma metamorphism with igneous protolith (1080–1070 Ma), and (5) 650 Ma metamorphism with detritus zircon formed between 1150 and 800 Ma. The obtained age results imply that various different allochthonous metamorphic terranes were assembled along collisional zone of the EAAO during the period from 650 to 500 Ma. In this presentation, we discuss possible tectonic setting of the each terrane focused on the geochemical characteristics of mafic metamorphic rocks. Our preliminary result, at least, revealed that the protoliths of mafic gneisses in the Schirmacher Hills and Filchnerfjella were originated from different geological province.

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