

Microboudin method for palaeostress analysis of tourmaline-bearing pelitic rock from the Ryoke metamorphic belt

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Microboudinage structures of tourmaline embedded in a pelitic rock corrected from the Ryoke metamorphic belt in the Yanai district was used for palaeostress analysis with the microboudin method. The absolute magnitude of palaeodifferential stress is 30 MPa. In other microstructural observations, the mineral lineation of tourmaline was not so developed, and the quartz fabric in quartzose rocks corrected within 5 m from the pelitic rock appears of irregular-type (secondary recrystallization). These observational results imply that the Ryoke metamorphism occurred in lower stress condition.

These obtained value of palaeodifferential stress, the occurrence of mineral lineation and quartz microstructures differ from the Sambagawa metamorphic belt. The results of palaeostress analysis with the microboudin method of the Sambagawa metamorphic belt were relatively higher than that of the Ryoke metamorphic belt; for instance, 50 MPa from the Asemigawa area in the Central Shikoku, 100 MPa from the Dozangawa area in the Central Shikoku, and 200 MPa from the Yomuragawa in the Kii Peninsula.