

## Mid Cretaceous extensional stresses in the final phase of the Oshima Orogeny in the northeastern Kitakami Mountains, NE Japan

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The Early Cretaceous Oshima Orogeny involved folding and extensive magmatism, and brought about the coalescence of the North and South Kitakami Belts (e.g., Ehiro et al., 2016). The deformations climaxed in the Barremian time (Ehiro et al., 2020), and the deformations came to an end before the deposition of the Miyako Group (Kobayashi, 1941), the basal part of which is ~115 Ma (e.g., Matusmoto, 1982). However, Uchino and Haji (2021) reported extensional stress by means of the paleostress analysis of dikes with the ages of 120–130 Ma. Unfortunately, the dikes were hosted by Jurassic and older accretion complexes, the structural complexity of which made the tilt correction of the dikes difficult.

To verify the extensional stress condition, we inverted orientation data from and 439 quartz veins in the vicinity of the basal unconformity of Upper Cretaceous forearc basin deposits. Though the dilational fractures were formed in the basement rocks of the formations, the gentle dip of the basal part of the formations allowed us to neglect the tilting of those dilational fractures. As a result, we got extensional stresses from the data sets. Tectonostratigraphy and radiometric ages of their host rocks suggest that the dilational fractures were formed probably in the Aptian time (113.2–121.4; Gale et al., 2020)—the final phase of the Oshima Orogeny. Thus, we made sure of the extensional stress condition found by Uchino and Haji (2021).

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