

SMP046-12

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## Wedge extrusion followed by major out of sequence thrusting accompanying duplexing, the high P/T Sambagawa blue schist

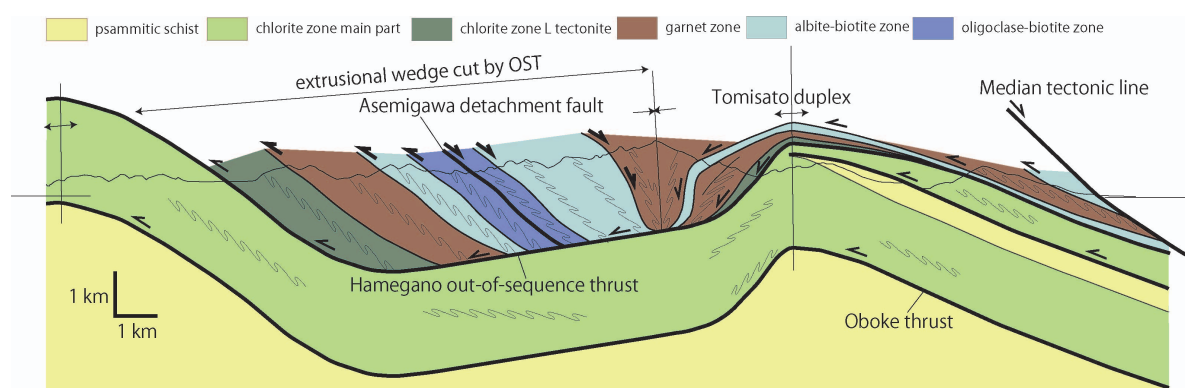
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I am seeking for a sponsor, like museum, city or town office, who kindly publishes the colored geological map, very wide, my studied area. Map file is pc based, and only 200,000 Yen for 500 copies is needed.

The Sambagawa high P/T zone of Besshi area is regionally mapped, and characteristic major structures performed the exhumation of high grade metamorphic rock is clarified. As noted by Osozawa and Pavlis (2007), the most fundamental structure is a D2 extrusional wedge. The southeastward wedge consists of a series of normal faults domain at hanging wall of the Asemigawa detachment, and a series of thrust faults domain of the footwall. These faults bound every metamorphic mineral zone, and the thermal culmination of the Asemigawa section is oligoclase-biotite zone, hanging wall of the detachment fault. To the NW, we now confirm that the culmination is an eclogite body, constituting an axis of the extrusional wedge. To the SE, these extrusional wedge and a series of normal and thrust faults are linearly traceable on regional map, but suddenly not continuous to the chlorite zone and disrupted. The disruption is due to the Hamegano out-of-sequence thrust, newly found in this paper, and the Besshi unit is divided into two units. The OST divides the chlorite zone the upper L tectonite consisting of varicolored mafic schist, and the other lower pelitic schist. D2 folds at the hanging wall is disjunctive and broken by the movement of brittle OST. The OST is clearly traceable to the NW from the Asemigawa area. To the NE, a syncline is observed as mapped by previous studies, but it exists only on hanging wall, and the structure is discordance with not-folded or obscured footwall chlorite zone. Its SE limb, hanging wall of the OST, is extrusional wedge, but the NW limb consists of duplexing metamorphic mineral zones, and the syncline is lithologically asymmetric. Further to the NE, OST and hanging wall duplex is involved in NW plunging anticline. We named the duplex stack formed near anticlinal axis of OST, the Tomisato duplex. OST and duplex moved SW, as a final expression of metamorphic exhumation, following the wedge extrusion. The Median Tectonic line might have played an important role for exhumation as a root, but most of the Besshi unit, including eclogite body, is consequently rootless. Interestingly, the chlorite zone rocks hanging wall of the OST include a psammitic schist, only at the NW limb of anticline. The schist is lithologically similar to that of the Oboake unit, the structurally lowest unit. The Oboake unit and thrust is also concordantly folded with the OST and duplex, for the anticlinal axis. Another anticline is to the SW, Nakashichiban area, where the psammitic schist of Oboake unit is once again exposed.

Metamorphosed ultramafic rocks, including eclogite, are distributed in every metamorphic zone. The metamorphic minerals constitute D1 foliation overprinted by D2 deformation. Therefore, ultramafic rocks were amalgamated with surrounding rocks before D1. Two possibilities of mixing mechanism are expected; sedimentary or tectonic melange process, and we prefer in this case tectonic slicing during D0 at deeper subduction zone, by considering eclogite metamorphism.



Keywords: Sambagawa high P/T zone, extrusional wedge, out-of-sequence thrust, duplex, exhumation, D2