

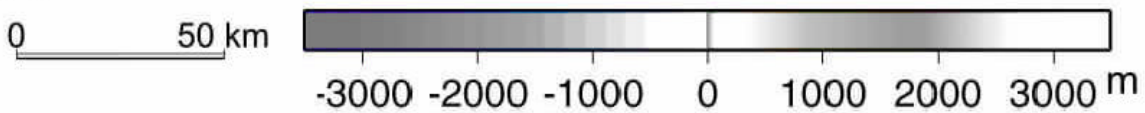
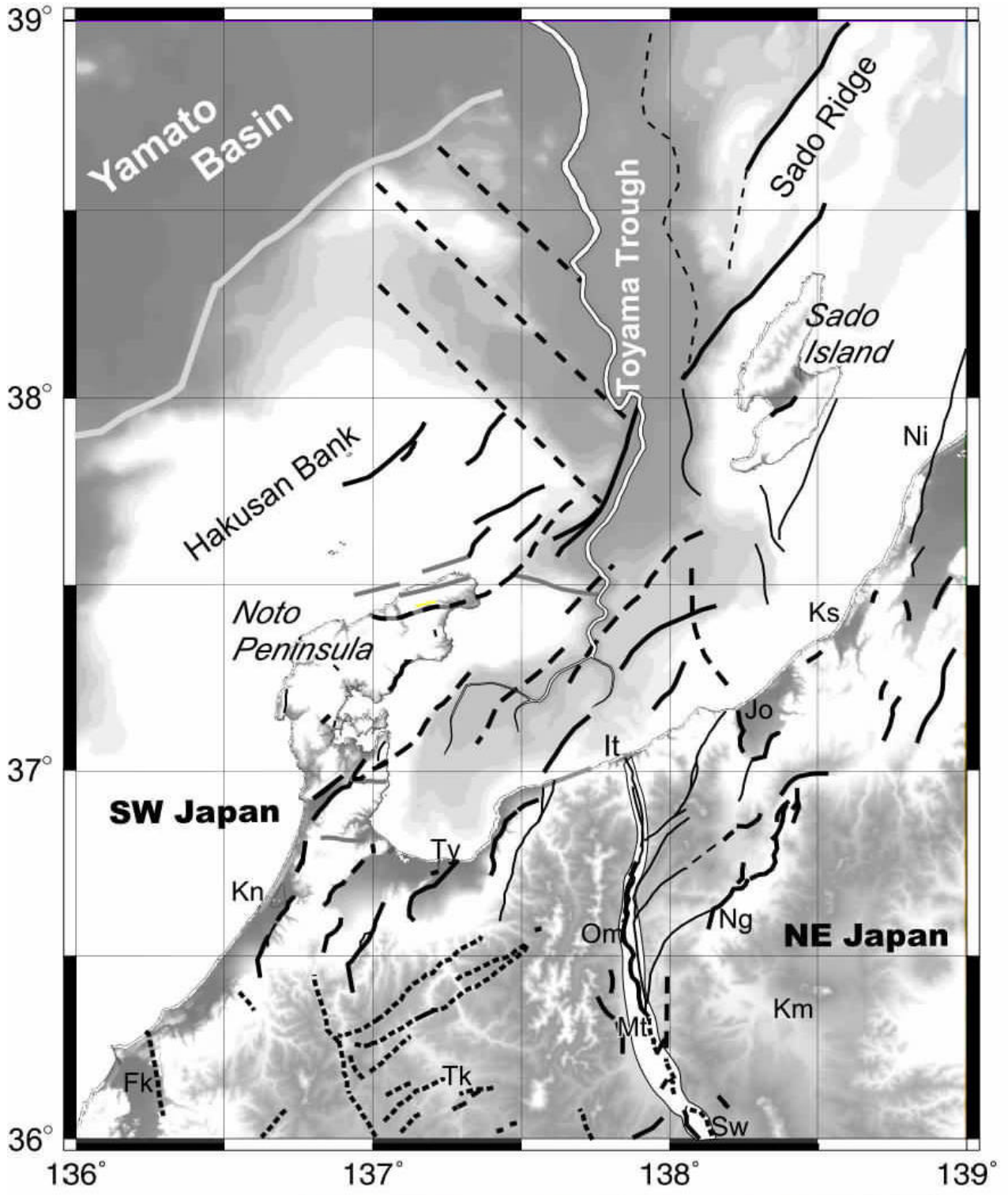
# Basement-involved tectonics in the Toyama Trough and the North Fossa Magna, central Japan

# Akira Takeuchi[1]

[1] Dept. Earth Sci., Toyama Univ.

<http://ems3g.toyama-u.ac.jp/~takeuchi/>

Toyama Trough and Fossa Magna were the major transverse tectonic depression located between Northeast Japan (NEJ) and Southwest Japan (SWJ). Itoigawa - Shizuoka Tectonic Line (ISTL), the west margin of Fossa Magna, is a boundary between two tectonic provinces along the inner side of NEJ and SWJ. Abrupt lateral variations in thickness of the Middle to Upper Miocene strata are quite significant among these provinces in the North Fossa Magna. The development of the thrust/fold belt is attributed not only to horizontal compression but also to vertical block movements as a basement-involved tectonics. In response to the Pliocene and later compression regime, the old fault-block boundaries are reactivated, and produce differential block movement such as the tilting of the Central Upheaval Zone and uplifting of the Nishikubiki Belt. One possible model for the deeper geologic structure is presented that high-angled block faults on the surface among tectonic provinces originate in vertical weak zones in the deep seismogenic zone under the sedimentary layer. The folded Neogene system comprises the present-day thrust-fault province of the North Fossa Magna and the stress regime of strike-slip faulting occupies the basement as inferred from focal mechanism solutions for small events. In order to account for the apparent discrepancy, a duplex stress field is possible for the active tectonics in the region.



- ..... Active Strike-slip Faults
- Active Reverse Faults
- Pleistocene Reverse Faults
- Late Miocene Reverse Faults
- - - - Early Miocene Normal Faults (buried)
- ~~~~~ Itoigawa-Shizuoka Tectonic Line (ISTL)
- ~~~~~ Toyama deepsea channel