Japan Geoscience Union Meeting 2015
(May 24th - 28th at Makuhari, Chiba, Japan)

SCG57-P01 Room:Convention Hall Time:May 27 18:15-19:30

Dynamics that connects massive earthquake and cross section structure of Aomori, Iwate, and Miyagi

MASE, Hirofumi[1]*

[1]none

In convergence zones, high temperature bodies are formed diagonally-on-and-under the plate of low temp. and the bodies are drawn each other. The mantle wedge and the plate, get on the high temp. body that heads westward from the east, head westward. And, they are placed by the high temp. body that heads eastward from the west and compressed. I think this is the main spring and structure in it. I explained in each respect of the theory, experiment, and application.(1)(2)

This time concerns the structural understanding of the north off Miyagi. First of all, I can recognize the feature of Miyagi(Section d-d') again by the comparison with Aomori(Sec. a-a'). Hot4 of the high temp. is extended to the west more and Hot5 is extended to the east more. And, the direction of the main spring is almost horizontally. Moreover, because there is no remarkable hot section in (the wedge in the east coast east)(W), modeling and repro.-experiment in the slip zone of 3.11 were easy. Hot4 that surges from the west has the tendency to be stuck well to the slope in the east part, and stagnates. And, the material accumulates about there. As a result, the land is formed and maintained. However, in the eastern edge, pressure tends to come off to the under east. Because W is pushed from the west true side, flaking-off along the boundary can be expected.

The feature of Aomori is entirely different. Because Hot 4 and Hot 5 do not extend, the angle of the mainspring and the slope is squarely near. And, Hot 4 approaches the slope first and develops along it. Therefore, the land does not develop. Because W is pushed from the under west diagonally, flaking-off deviates from the boundary on the way and pushes up bottom of the sea. Material collects there and Dome develops. Because, on the east side from that place, power to stop the Dome is generated in the reaction from the under east diagonally, flaking-off along the boundary will not happen easily here similarly. Though Sec. a-a' and Sec. b-b' look like, more active slip of climbing up the slope is expected in the former because it has the engine(Hot 1) also in W. Region AO in the Plane chart is peculiar in these reasons.

In comparison with off Miyagi, following matters were mysterious (8). In the large earthquake(EQ) in 1968 and 1994, the position of initial rupture(IR) and main rupture(MR) is mutually away (7). It seems the 1994 EQ destroyed from the shallow to the depth widely (13).

However, according to the above-mentioned structural understanding, it can explain that the characteristic of large EQ in region AO is having the seismic source process that ,on the east side of the Dome, the stopper moves first(IR) and ,west side, the large slip starts(MR).

The temp. structure of Iwate(Sec. c-c') is intermediate as a whole. It is peculiar that there are low temp. bodies under the land and there is huge Hot 3 in W. Hot 3, Hot 4, and Hot 5 pull each other mutually. The underground is pushed from east and west and the land is supported by steady pressure. I think that Sanriku can exist for this. Because Hot 3 is pulled to the under east diagonally, point of W and subducting slab are pushed immediately. This and earthquake-prone zone(9) relate.

(1)MASE/SSJ2010/P3-47 (2)MASE/JpGU2012/SCG67-P06 (3)MASE/SSJ2012/P2-75 (4)MASE/JpGU2013/SSS28-P09 (7)NAGAI et al.(2000)/ERI U-Tokyo (8)MASE/JpGU2014/SSS30-P01 (9)JMA/Monthly Report/July 2005 (13)SendaiDMO,JMA/The 1994 Far Off Sanriku Earthquake