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

SSS30-P01 Room:Convention Hall Time:May 25 18:15-19:30

Two seamounts in the near south of Nankai Trough concentrate stress like stake

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[1]none

(Please refer to the figure. Names of the slab, topography of seabed, etc are naming only of here.)

Collapse by intraplate earthquake, Separation of accretionary wedge, and Rotation of Slab by lateral-fault type are Nankai-Trough earthquakes. The role of the 2004 off Kii Peninsula earthquake is the settlement of the 1944 Tonankai earthquake (1). I want to search for the relation of both earthquakes further. I post almost clear points by (1)-(5).

(A):Concerning range of slip, it of 1944 did not reach the Trough, and it of 2004 twined round the Trough. Both are complementary and do not overlap so much.

(the following points are concerned in 2004)(B):The compression power in north-south is the cause.

(C):The foreshock, the main shock, and big aftershocks are distributed along the Trough, and are almost thrust-type that destroyed intraslab.

(D):Aftershocks distributed in northwest-southeast are almost shallow and lateral-type. In the accretionary wedge and the upper layer-of-lower-plate, the large-scale lateral fault belt exists.

(E):Everything is distributed in the west of the Crack(b).

(F):On the extension of the south end of the Crack(a), two big thrust-type aftershocks in 2 or 3 days occurred after the main shock.

(G):Large slip of the foreshock was in the deep place and in the vicinity of the hypocenter. That of the main shock was in the shallow place and in the west left from the hypocenter.(3) After all, the positions of both large slip are near.

About the large slip(G), there is Daiozaki Cape in almost due north and is WM Seamount in south. I think that the compression power(B) was the maximum in this north-south line. So that the power from the north that originates in the right-turning force(1) may concentrate in a narrow range in the vicinity of the Trough, existence like stake that concentrates the stress of reaction is dynamically indispensable in the south nearly of the Trough. WM Seamount might be ”Stake” exactly. EM Seamount where aftershock(F) occurred shortly in the vicinity might be ”Stake” too. The lateral fault belt(D) passes between two ”Stakes” in east and west.

The stress of WM Seamount that was large before the earthquake decreased sharply by the large slip(G). At this point, the north-south compression(B) has collapsed. Next, what happens? Because materials that exist in the left above of both ”Stake” in Fig.2 are alive and well, the stress from that direction(northwest) increases rapidly.

In a word in 2004, the north-south compression after 1944(B) might have been converted to the northwest-southeast compression in dramatic form. And, there is naturally a possibility of returning to the north-south compression(B) again in the future. Only this is the Tonankai earthquake when the future. Only this was the Tonankai earthquake in 1944.

(1)MASE(2014)/JpGU2014/SSS29-P10

(2)YAMANAKA(2004)/Source rupture processes of the 1944 Tonankai earthquake and the 1945 Mikawa earthquake/Chikyu Monthly/26/11/739-745

(3)YAGI(2004)/http://iisee.kenken.go.jp/staff/yagi/eq/Japan20040905/Japan20040905_1-j.html

(4)JMA/Monthly Report/September 2004

(5)KANAZAWA/http://cais.gsi.go.jp/YOCHIREN/history/2-3-6_kii2004.pdf

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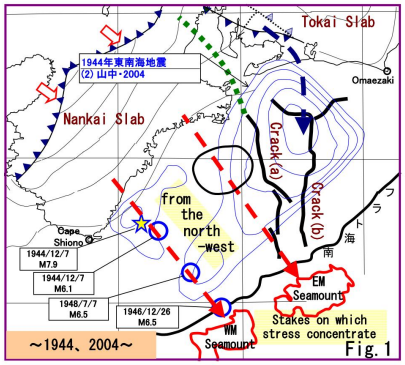

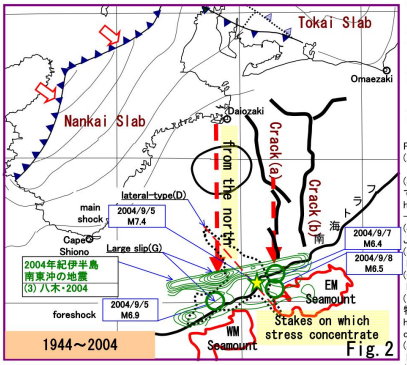

/About sea bottom
(shape line)
extracted from (6)/
/About "Nankai Slab"
(shape line, contour)
referable to (7)/
/About "Tokai Slab"
(shape line, contour)
referable to (8)/
/About information on earthquake
(All not mentioned specially)
referable to (9)/

Reference literature
(2)山中佳子(2004)/1944年東南海地震と1945年三河地震の震源過程
/月刊地球/26/11/739-745
(3)八木勇治(2004)/2004年9月5日紀伊半島南東沖で発生した地震について/建築研
http://iisee.kenken.go.jp/staff/yagi/eq/Japan20040905/Japan20040905_1-j.html
(4)JMA/Monthly Report on Earthquakes and Volcanoes in Japan/September 2004/特集2/図6-5(P64)等
(5)金沢敏彦/紀伊半島沖[三重県南東沖]の地震/東大震研
http://cais.gsi.go.jp/YOCHIREN/history/2-3-6_kii2004.pdf
(6)JHOD,JCG/Seafloor Topography of the Plate Boundaries
http://www1.kaiho.mlit.go.jp/jishin/sokuryo_E/sokuryo_E.html
(7)木村昌三(2001)/1946年南海地震に関係する四国における地震活動の特徴/(図2)
https://www.jstage.jst.go.jp/article/jgeography1889/110/4/110_4_581/_article/-char/ja/
(8)Nagoya Univ./Structure of the Subducting Philippine Sea Slab
http://www.seis.nagoya-u.ac.jp/SEIS/slab/slab-j.html
(9)JMA/Monthly Report on Earthquakes and Volcanoes in Japan/September 2004/特集2/図7-1(P65)
http://www.seisvol.kishou.go.jp/eq/gaikyo/index.html#monthly