

## Seismotectonics around the southern margin of the Kanto district (part 1)

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1. We investigate the regional seismotectonics as well as the larger earthquake activity around the southern margin of the Kanto district by referring not only researches on the current subducting slab geometry of the Philippine sea plate (hereafter, PH) over the subducted Pacific plate slab (PC slab) at the Sagami trough but also the hypothetical reconstruction models of the northern margin of PH based on the absolute plate motion models etc. To study the detailed nature of the seismotectonics, we must incorporate the evolutionary history of PH, the accretion tectonics along the paleo- and recent Sagami trough subduction zone, and the 3-D thermal structure.

2. The geometry of subducted PH slab around the southern part of the Tokyo metropolitan area has been studied by authors (e.g., Kasahara, 1985; Ishida, 1992; Noguchi, 1996, 1998, 2007, Sekiguchi, 2001, Hori, 2006, Kimura et al., 2006; Eguchi and Hori, 2007). Also, as for the seismic activity, including larger events such as the 1923 Kanto earthquake, around the area, various researches have been reported. In this study, we classify the seismic activity around the area as follows:

- 1) Events within the overriding plate (the northeastern Japan arc plate)
- 2) Events at the plate interface between the overriding and PH plates (or between the overriding plate and slab SG) (e.g., 1923 Kanto earthquake)
- 3) Events within PH (or within slab SG)
- 4) Thrust events between slab SG and PC
- 5) Interplate events between PH and PC
- 6) Events within PC
- 7) Slow-slip events
- 8) Unknown events

Here, slab SG (seismic slab SG) means the seismogenic layer above the downgoing PC slab around the area, excepting those of which corresponding to the overriding surface plate of the northeast Japan arc. As a possibility, Slab SG is merely eastern part, having been cooled by the downgoing PC slab, of 65-70km thick lithosphere of IOB (the Izu Outer Block) without any other slab components (Eguchi and Hori, 2007). We discuss the time-space characteristics of these classified seismic event groups around the area.

3. The absolute plate motion of PH, including its evolutionary history, is one of the important items of the seismotectonics model around the southern margin of the Kanto district. Although the accuracy of the paleo motion models of PH is generally not high, we try to consider the relationship between the recent seismic activity and the PH geometry during the period of at least several million years.