On the distribution of deep earthquakes in the Japanese islands and neighborhoods(2)

Yo Akamatsu[1]; Adachi Hisao The Research Group of Deep Structure of Island Arcs[2]

[1] Tachikawa High School; [2] -

In the area along Hokkaido and Kuril islands, the depth of earthquakes increase northwestward from the Chishima-Kamchatka trench in general, in which seismicity unit characterized by its own depth distribution and bounded by vertical planes running in NW-SE direction on both sides is discriminated (Fig. 1). The width is about 50 to 150km. The large seismicity unit composed of 2 to 5 small seismic units is also discriminated, on both sides of which depth distribution shifts in shallower or deeper area and spatial distribution expands or shrinks.

In Japan Sea area, the seismicity units are discriminated by planes running in NW-SE direction in the northeast part of Japan basin, and in ENE-WSW direction in the central and southwest parts of Japan basin and in Yamato basin.

In the area along Izu-Ogasawara ridge, the iso-depth lines run in NNW-SSE diorection and dip away from Izu-Ogasawara trench westward in general. Sesmicity units bounded by vertical planes running in NNE-SSW direction are discriminated. Each seismic unit is about 60km in width. Large seismicity unit composed of 2 to 4 small units is also discriminated, which is 120 to 200km in width. The seismicity in most area of West Shichito ridge is dense from shallow depth to deep, so iso-depth lines are not drawn.

In the area along Kyushu and Ryukyu islands, the iso-depth lines dip away from Ryukyu trench northwestward. The seismicity units cut by vertical planes running in NW-SE direction are also discriminated. Each unit is about 50km, and large seismicity unit composed of several small units are also discriminated. They are about 200 to 400km in width.

Each seismic units correspond roughly to topographic units. It might be due to the fact that each topographic unit spreads its root vertically several hundred km in depth, and block-like structure is expected in the deeper part of the earth, so the subduction and convection current cannot be expected there.