

Characteristics of Seismic Intensity Distribution and Environmental Geology

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After the 1995 South Hyogo Prefecture Earthquake, many seismometers are installed all over the Japan by National Research Institute of Earth Science and Disaster Prevention, Japan Meteorological Agency (JMA), Ministry of Home Affairs, etc. If the observed seismic data is disclosed, earthquake ground motion characteristics, geological structure and vibration units will be more cleared. Using the distribution map of seismic intensity of JMA and calculated it from K-net data, are transmitted by Internet System, earthquake ground motion characteristics are studied from the standing point of geological structure and environmental geology.

Distribution-maps of seismic intensity, from the March 1997 to September 1999, were analyzed. Many earthquakes have distribution directivity of seismic intensity. In case of Southern Ibaraki Prefecture, region name of epicenter, the felt area, more than seismic intensity scale 1 are distributed surroundings of the Kasumigaura-lake, around southern part of the Yamizo Mountains and some site near the Ashio Mountains, which age are Cretaceous or more older. The epicenter is not located in the center part of felt area but also positioned in southeast side. It is understood that the same relation between the location of epicenter and the felt area in the Southern Ibaraki Prefecture earthquake. In case of the Off Ibaraki Prefecture earthquake, the felt area are distributed around the southern part of the Yamizo Mountains and the eastern side of the Ashio Mountains. It seems related between the distribution of the old massif i.e., Abukuma Mountains and Yamizo Mountains, and distribution of elongated these mountains.

It is important toward the prevention of seismic hazards to clear the relation between the seismic intensity distribution with each epicenter and the geological structure, such as distribution of tectonic lines, shape of sedimentary basin and distribution of pre-Tertiary basement rocks, crust and upper mantle structure.