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Re-Examination of the 1762 Horeki Sado Earthquake

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We found new historical documents of the 1762 Horeki Sado earthquake and re-examined seismic intensity distributions. In this study, we reported new documents and estimation of the source location and magnitude.

The earthquake that occurred off Sado Island caused tsunami damages on the northern coast of Sado Island. The epicenter was estimated by Imamura(1947), Usami(1975,1987,1996,2003), Hatori(1990)and Kawauchi(2000).Usami(1996) estimated the magnitude as 7.0 ,whereas Hatori estimated as 7.2 from tsunami damages and the area of seismic intensity 5.

Seismic intensities were large at Sado Island and the coast of Niigata, Yamagata prefecture. Imamura (1947) estimated epicenter E off Sado Island, somewhere near the midway between Sado and Niigata.

Usami (1975, 1987, 1996) estimated epicenter E off Sado Island, 138.7deg E 38.1deg N and suggested 38.35deg N by the change possibility of disaster area (2003). Hatori (1990) drew refraction diagrams of the hypothetical tsunami to see the shoaling effects around Sado island and concluded epicenter was N off Sado Island, the northern peninsula Hajikizaki,138.3deg E 38.4deg N. Kawauchi (2000) inferred the epicenter W off Awashima Island off Sado Island,138.8deg E 38.6deg N. We investigated historical documents of Niigata, Yamagata and Akita pref. and found 5 new documents that were unpublished in the compiled historical earthquake documents. With these new documents and published historical earthquakes, we tried to estimate the epicenter of this earthquake. The epicenter was estimated N off Sado Island.

Keywords: 1762 Horeki Sado earthquake, Historical earthquake

References: Tatsuo Usami, Materials for comprehensive List of Destructive Earthquakes in Japan. [416]-2001
Akitune IMAMURA: Seismic Activity of Both Sides of the Fossa Magna, Proc, Imp. Acad, 22(1947), 314-321.

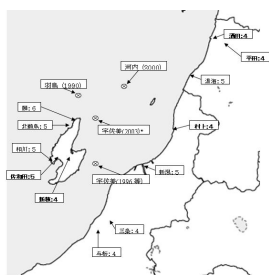


図1 宝暦十二(1762)年佐渡地震の震央・震度分布

Fig1 The epicenter, Intensity distribution of the 1762 Horeki Sado Earthquake

ゴシック文字は新史料を示す、字匠(2003) *は、精島を北群島と考
えたときの位置を示す。

Keywords: 1762 Horeki Sado Earthquake, Historical Earthquake