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Holocene Tsunami deposits along the Pacific coast, northeast Japan

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We have investigated historical and pre-historical tsunami deposits to clarify the timing and the recurrence interval of great earthquakes beneath the Japan trench.

AD 869 Jogan tsunami deposits and other deposits corresponding to large tsunamis were identified at Sanriku coast and Joban coast, mainly based on drilling survey using geoslicers. Major results of the research are as follows:

- (1) Sand layers corresponding to AD 869 Jogan tsunami were identified at Matsukawaura (northern part of Joban coast) and Namie (middle part of Joban coast), as well as at Sendai Plain. In contrast, deposit corresponding to the Jogan tsunami was never found in Rikuzentakata (Sanriku coast), indicating that Jogan tsunami did not reach here.
- (2) Event deposits before Jogan tsunami were found in Matsukawaura and Namie. They show the depositional age of ca 2.3-2.5 ka, 2.6-2.8 ka, 3.3-3.6 ka, 3.9-4.3 ka and 4.8-5.2 ka, suggesting that large tsunamis have left sandy deposits in 700-800 years intervals on average. Although these intervals are similar to those reported at Sanriku coast, most of the depositional ages of event deposits in Joban coast do not coincide with those in Sanriku coast. This might reflect the fact that Sanriku coast and Joban coast have experienced tsunamis from different source areas, respectively.
- (3) Event deposits after Jogan tsunami (AD 950-1450), which are not reported in historical records, were discovered at Rikuzentakata and Matsukawaura. These could be the tsunami deposits owing to unknown great earthquakes, so that further research about these deposits is needed.

Keywords: Jogan-tsunami, Joban-coast, Sanriku-coast, Tsunami deposit