

Sedimentary process of a small sandy event deposit due to the storm surge and storm wave of a typhoon.

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We revealed features and depositional processes of the sandy event deposits (SED), which was caused by a storm surge and high waves during the 1959 Miyakojima typhoon around Hirahama coastal lowland, along the western coast of Oshima Peninsula, southwestern Hokkaido. We excavated new three trenches at the lowland and studied sedimentary features and grain-size. Sedimentary features implies that the 1959 SED was deposited from an unidirectional run-up flow. The deposits can be subdivided into three units: units T, S and F in ascending order. Unit T shows 3D dunes. Unit S shows bedform transition from 2D dunes to ripples. Unit D consists of a mud layer including suspended plant and pieces of wood. Grain-size analysis shows that Units T and S have a peak at around 2.0 Phi (P-2 population) as same as the beach sand from Hirahama Coast and a wide grain-size distribution over 0-4 Phi because fluvial bed of Yumiyama River(P-1 and P-3 populations) mixed. According to Dmax, Unit T shows coarsening upward from -0.25 to 0.25. On the other hand, Unit S shows to be finning upward and 0.75 from 0.25. Therefore, Unit T recorded the amplification process of the storm surge and high waves energy due to typhoons in after 9:00 on September 18. Unit S recorded the decay process of the high waves and storm surge energy associated with the movement of the typhoon of 13:00 to 14:00 or later. After 0:00 to 1:00 on September 19, suspended solids and wood fragments in stagnant water covered the Unit S then deposited Unit D because the typhoon was gone.

Keywords: washover sediments, 1959 Miyakojima typhoon, sedimentary structure, sedimentary process, grain-size analysis