

Formation and evaluation of current caused by breaking of Yori-mawari wave in coastal areas of Shimoniikawa, Toyama, Japan

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Numerical simulations were conducted using SWAN for Yori-mawari waves, which occurred on Feb. 2008 and caused damages to the coastal zones of Toyama, Japan. The results were analyzed especially for Shimoniikawa district where suffered heavy damage. They showed that significant wave height increases at the ridge parts of seabed topography due to refraction, then, decreases rapidly at the wave-breaking zones shallower than 10 meter depth. The characteristics can be explained by Wave-Induced Radiation Force (WIRF), and the current velocity estimated from the balance between WIRF and bottom friction has a good correspondence with the observed velocity.

Keywords: Yori-mawari wave, Breaking wave, Radiation Stress, Wave-Induced Radiation Force, SWAN