

## Failure Mechanism of Breakwaters at Kamaishi Bay by using K computer

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A lot of breakwaters were damaged by the 2011 off the Pacific coast of Tohoku Earthquake Tsunami that had been caused on March 11, 2011. Because a lot of tsunami exceeded the crown of the breakwater, there were a lot of cases where a breakwater was damaged when the tsunami overflowed it. The stability in the breakwater under the tsunami overflow has not been researched up to now, and the mechanism is not clear. The Kamaishi bay mouth breakwaters were presumed to have been destroyed when the tsunami overflowed from the physical experimental analysis. In the present study, the tsunami situation around the Kamaishi breakwaters was calculated by K computer based on STOC-CADMAS system, which is the Multi scale simulator, and verify the failure mechanism of breakwaters by using CADMAS-STR system, which is the coupling system with the structure analysis.

Keywords: Tsunami, K computer, Breakwater, Kamaishi Bay, Failure Mechanism

