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Experimental Validation of Dam-Break Problem for Two-Phase Flow Numerical Simulation KEISUKE HARA, ZENSAKU KAWARA, TOMOAKI KUNUGI, Department of Nuclear Engineering, Kyoto University, TAKU NAGATAKE, Japan Atomic Energy Agency — In order to validate the numerical method it is important to compare the results of the numerical simulation to the experimental ones. The dam-break problem is one of the well-known validation tests for the multiphase flow computations. However, a few experimental data are available until now regarding the problem. In the validation test, it is necessary to consider the differences between the experiment and the numerical simulation. In this study, we conducted the dam-break experiments and measured the position of the water-front and the gravity center of the water region. These experimental results were compared with the numerical results obtained by the MARS (Kunugi, 2001). The water-front position has been used as a reference to validate the numerical method. When the size of the liquid column changed to double without changing the aspect ratio, the non-dimensional water-front positions were changed. On the other hand, the gravity center positions of the water region obtained by the experiments for both cases were in good agreement with each other and also with the numerical results. As a conclusion, the gravity center position must be used as the validation measure instead of the water-front position. Kunugi,T. CFD Journal, 9, (2001) pp.563-571

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