

## The characteristics of the fluctuation of the current velocity and direction on the tidal river, Doki Riv. and Asahi Riv.

Hideo Oyagi<sup>1\*</sup>, Yuta Shimizu<sup>2</sup>, Yoshiaki Kato<sup>2</sup>, Mitsuyo Saito<sup>3</sup>, Guangzhe Jin<sup>2</sup>, Shin-ichi Onodera<sup>4</sup>

<sup>1</sup>Coll. of Humanities and Sci., Nihon Univ., <sup>2</sup>Grad., Integrated Sci., Hiroshima Univ., <sup>3</sup>CMES, Ehime Univ., <sup>4</sup>Integrated Sci., Hiroshima Univ.

The littoral region has an important function for the ecosystem and the substance transport of water resources. However, the paper for characteristics of the substance transport on the tidal area is extremely few, and still a lot of problems have been left for the mechanism of the substance balance in the littoral region. Therefore, it is important to make clear the temporal changes of the hydrological characteristics in order to establish the water management. From the viewpoint of both water resources and hydrological environment, fundamental data on physicochemical characteristics of the lake should be collected and analyzed in order to sustain the better scheme of water management. The purpose of the present study is to evaluate the temporal changes in water velocity and direction of the tidal area as affected by the fluctuation of tidal in the Doki River and Asahi River, these river are the tidal river, also flow to the Seto Inland Sea. As an observational result, the river discharge was disordered in before or after 1 hour of ebb tide and flood tide. Moreover, the backflow was confirmed the salt water flowing to the upper river in lower layer of the river between the rising tidal. In addition, as an observational result for Asahi River, the current velocity of the surface layer was 0.2 - 0.3 m/s. However, the current direction flows oppositely compared with the surface though current velocity was almost the same. These results shows the characteristics of the temporal changes in water velocity and direction of the tidal area on the each water body of the current river water and seawater in Doki River and Asahi River.

Keywords: tidal area, water balance, current velocity, current direction