

Continuous Monitoring of Tidal Bores Using Acoustic Tomography Technique

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Abstract

Salinity intrusion to the upstream of estuaries has become a major issue in the coastal areas. This phenomenon intensifies in lack of river discharges. The result is salinity increment in agricultural lands located near the estuaries. In this study, the tidal currents, as well as the river discharges were measured using an Acoustic Tomography Technique. Two acoustic stations were deployed on both sides of Kyu Ota Estuary and measured the variations of stream flow affected by tidal currents for 42 hours. The results of measurement showed that the river discharge was between 20 to 50 m³/s. Whereas, the stream flow direction changed abruptly to the upstream at the time of passing tidal bores. The maximum stream flow was approximately 20 m³/s to the landward. Therefore, acoustic tomography technique can be introduced as an appropriate instrument to monitor the estuary stream flows.

Keywords: *Salinity intrusion, Continuous tidal currents monitoring, River discharge, Acoustic Tomography Technique.*
