STUDY ON IMPROVEMENT OF RELIABILITY OF RIVER DISCHARGE OBSERVATION DATA USING NEW SENSOR TECHNOLOGY

Abstract : It has been becoming issue to improve the accuracy, efficiency and reliability of river discharge management and its observational data as the basic foundation of river planning/management. For purposes of establishing new technologies, obtaining the accuracy of observed value, and improving the observation, the research team 1) improved the accuracy and inspected of the applicability of the discharge measurement with Acoustic Doppler Current Profiler (ADCP), 2) studied about cross- and vertical-sectional velocity distribution, which was obtained by ADCP, and 3) upgraded the PWRI's support software system for creating/checking HQ rating curves (HQ system) for eliminating the coast and the labor. As one of the research outputs, the research team improved the moving vessel in terms of acquisition rate with applying a gimbal structure, which is able to keep the ADCP facing vertical. In addition, the team estimated the observational expected accuracy/deviation of the traditional discharge measurement. Finally the team upgraded the HQ system for stabilizing the system with changing the data-operational software, and for solving the problems/requests which were informed by users.

Key words : discharge measurement, velocity distribution, river-discharge measurement system applying the acoustic technology, gimbal structure, and support software system for creating/checking HQ rating curve