

3D analysis of a sandy point bar in the Yahagi River, central Japan, using GPR survey

OKAZAKI, Hiroko^{1*} ; KWAK, Youngjoo² ; TAMURA, Toru³

¹Natural History Museum & Institute, Chiba, ²International Centre for Water Hazard and Risk Management under UNESCO, Public, ³Geological Survey of Japan, AIST

We conducted a ground-penetrating radar (GPR) survey of a sandy point bar in the Yahagi River, central Japan, to clarify the three-dimensional (3D) depositional facies. The survey was conducted in January 2015 using a 250-MHz antenna. Surveyed bar, which is 725 m long, 160 m wide, is composed of two or more rows of bars. Three-dimensional dunes characterize the surface of middle- lower downstream parts. We identified inclined reflections, horizontal reflections, and trough-shaped reflections in the bar. Inclined reflections are predominant in longitudinal sections, and horizontal reflections and trough-shaped reflections are common in transverse sections. These reflections represent downstream migration of the bar, developments of three-dimensional dune, chute channel during floods.

Keywords: GPR survey, sandy point bar, Yahagi River, Japan