

Multi-electrode measurements at Thai Binh dikes (Vietnam)

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Abstract

The province of Thai Binh is located in the delta of the Red River in Vietnam where an extensive system of river and sea dikes protects the population and infrastructure from flooding in the rainy season. The integrity of the river dikes is affected by a diversity of problems. Importantly, various termite species dig their nests in the dikes causing water leakage. Leakage can also occur near sluices and passages. Geoelectrical multi-electrode profiling has been applied to locate defects in the dikes. Surveys carried out on several dikes demonstrated that a combined half-Wenner configuration yields high-resolution images in which termite nests are indicated by resistive anomalies. Petrophysical investigations of soil samples and density logs yield additional information on the dike material. Elsewhere, imaging surveys confirmed the subsurface extent of a buried sluice structure in the dike body.

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