

Determination methods for streambed hydraulic conductivity in the lower reach of the Yellow River

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Abstract Streambed hydraulic conductivities (K) in the lower reaches of the Yellow River have been determined by using *in situ* standpipe tests and grain size analysis. *In situ* standpipe tests from Huayuankou, Gaocun, Sunkou, Aishan and Luokou in the lower reaches of the Yellow River, give streambed vertical hydraulic conductivities (K_v) of 0.71, 0.29, 0.34, 0.19 and 0.24 m day⁻¹, respectively. The streambed horizontal hydraulic conductivity (K_h) at Huayuankou is 1.81 m day⁻¹; the ratio of K_h to K_v is about 2.5, implying anisotropic streambed sediment. Results of the *in situ* standpipe tests are used to check the applicability of the indirect method of relating K to grain size distribution characteristics. In the absence of direct methods, the grain size analysis method can be of certain significance in determining streambed K in lower reaches of the Yellow River.

Key words grain size analysis test; hydraulic conductivity; *in situ* standpipe test; lower reaches of the Yellow River; streambed
