Combined hydrological, rainfall–runoff, hydraulic and sediment transport modeling in Upper Acheloos River catchment

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\textbf{ABSTRACT}

The downstream impact of dams may solve but may also cause problems in catchment management. The present study assesses the hydrodynamic and sand transport regime of Acheloos River, focusing in the area upstream of the Kremasta Dam. Calibration and validation of water discharge presented very satisfactory coefficients of efficiency (Nash–Sutcliffe up to 85%). The proposed and applied in this study system of models and methods may be used as a water and sediment management tool in dammed or undammed catchments. The results from the present study are deemed to contribute towards improving the existing knowledge of the Acheloos hydrodynamic regime and better comprehending the sediment transport mechanisms.

\textbf{Keywords:} Acheloos; Hydrological model; Rainfall–runoff model; Hydrodynamic model; Sediment transport; Erosion; MIKE SHE; MIKE 11