

## The Haupingshu Canyon (SW East China Sea): morphology and sedimentary processes

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The Haupingshu Canyon (also known as the Mienhua Canyon) is a multi-head submarine canyon which indents the shelf in the southwestern part of the East China Sea. Using seismic reflection sections and bathymetric mapping, we reveal erosive sedimentary processes responsible for entrenched thalweg and sediment dispersal of the canyon that are closely related to turbidity currents in the canyon during the late Pleistocene. The canyon system consists of three distinct units: (1) tributary canyon heads which cut into the shelf, (2) wide trough cut by entrenched thalweg, and (3) narrow V-shaped canyon with steep walls on the slope.

The Haupingshu Canyon head incises into the shelf for a relatively long distance of about 100 km. During the last lowstand of the East China Shelf the canyon head was located in an area with sediment supply close to the paleo-river mouths. The second segment of the upper reach is dominated by a deeply incised canyon pathway with trough-like morphology. Canyon morphology is interpreted as a result of erosive sediment flows along the entrenched thalweg that caused downcutting into the canyon floor. We infer that erosive flows in the canyon resulted from hyperpycnal currents at the river mouths during periods of lowstand sea level. Moreover, sediment-gravity flows may be generated from the collapse of V-shaped canyon walls that may be over-steepened by tectonic deformation.

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