



## **Tectono-sedimentary controls on incision and sediment dispersal of the Kaoping submarine canyon, SW Taiwan orogenic wedge**

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The Kaoping Submarine Canyon develops on the frontal orogenic wedge off SW Taiwan and is the largest and deepest one among others. The canyon begins at the mouth of the Kaoping River, crosses the shelf and slope region and finally merges into the northern Manila Trench for a distance of about 260 km. The upper reach extends down-slope transversely and the middle and lower reaches run along escarpments and ridges formed by associated folds and thrust faults. Incision and morphology of the Kaoping Canyon vary considerably and are strongly influenced by diapiric intrusions and westward folds and thrust faults. Multiple cut-and-fill features occur commonly in the canyon. Terraces formed at canyon walls are associated with over-spill of turbidity currents. The Kaoping Canyon is mainly fed by sediment from the small mountainous Kaoping River with high sediment load. The river-canyon connection forms a direct sediment source to sink link during the flood season, producing sediment flows. Hyperpycnal flows and slumping significantly contribute to canyon incision. Escaping from the narrow Kaoping Shelf, much sediment from Taiwan is transported via the Kaoping Canyon to the Manila Trench. This canyon is not only the major sediment pathway for orogenic sediments derived from the Taiwan orogen delivered to the northern South China Sea and the Manila Trench but also the erosive agent to remove sediments of the orogenic wedge off SW Taiwan, infilling the Manila Trench.