



## **Evolution of the mouth of the Yellow River since 2002**

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The mouth of the Yellow River is one of the most active regions of land-ocean interaction in the world, with a continuous accretion of new land. Since 2002, both runoff and sediment input into the mouth has been subject to a significant control, making the mouth a natural experimental laboratory for studying delta development. To understand how the mouth adjusts the morphology since 2002, we undertake a remote sensing analysis in combination with field observations. It is shown that the river-mouth channel experienced a significant avulsion around 2008, before which the mouth channel extended its length continuously. With a significant decrease in the grain size of the suspended sediment input since 2010, the mouth channel tends to divide into two branches at its far most place into the sea. In contrast to previous claims that the accretion/erosion of the Yellow River delta is determined mainly by sediment input from the river, this study demonstrates quantitatively that both water and sediment inputs play a very important role in the evolution of the delta.