



## **Modeling Sand Wave Migration in northern South China Sea**

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The northern South China Sea is widely covered by sand waves. Their growing and migration may hazard the pipeline on seabed potentially. Therefore, engineers pay much attention to the stability of these sand waves. Recently, we have investigated these problems of sand wave movement in this area. Based on the two-dimensional vertical shallow water equation and the bed load transport formula, the relation of tidal current and deformation was established. Then, the dynamics of bed forms was simulated by a linear stability analysis. According to the yielding information, the growth rate and moving speed of sand waves have been predicted.

By choosing a combination of a steady current ( $M_0$ ) and two sinusoidal tidal motions ( $M_2$ ,  $M_4$ ) as the basic flow, the sand waves should migrate in the same or opposite direction of the residual flow. The results are much more close to the reality case. The methods of Hulscher and Besio were used in this study.