

海洋物理学

Altimetry-observed semi-annual cycle in the South China Sea: Real signal or alias of K1 tidal error?

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**摘要** There have been a number of applications of satellite altimetry to seasonal and interannual sea level variability in the South China Sea. However, these applications usually exclude shallow waters along the coast, with one of the concerns being large aliased tide-correction error. In this study the authors analyzed 14 years of merged satellite altimeter data to obtain the amplitude and phase of the semi-annual cycle and to examine the variation at the K1 alias frequency (close to the semi-annual frequency). The results indicate that the amplitude of the semi-annual cycle ranges from 3-7 cm, substantial compared with that of the annual cycle; while the amplitude at the K1 alias frequency (error of the K1 tidal correction) is essentially 1 cm only. Altimeter-derived semi-annual cycle is in good agreement with that from independent tide-gauge observations, pointing to the competent ability of satellite altimetry in observing semi-annual sea level variations in the South China Sea.

**关键词** [sea level](#) [semi-annual cycle](#) [satellite altimetry](#) [South China Sea](#)

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