

论文

由ERS-1波形重构确定我国近海平均海平面

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摘要 近海岸区域平均海面高在大地测量学、物理海洋学以及地球物理学研究中具有非常重要的意义. 受各种条件的制约和限制, 目前卫星测高技术主要应用于深海区域, 在近海区域尤其是海岸线附近区域的应用几乎为空白. 本文根据ERS-1测高卫星回波波形特征, 采用五参数线性模型, 由最小二乘拟合方法, 对近海区域尤其是靠近海岸线附近的ERS-1测高波形数据进行波形重构. 比较波形重构前、后解算平均海面高, 表明波形重构技术不仅明显改善了解算近海海面高的精度, 而且增加了近海测高海平面的分辨率, 并使卫星测高有效观测延伸至海岸线附近. 随后, 本文利用波形重构后海面高数据构造了近海多年平均海平面, 并对我国近海海平面特征进行了初步分析.

关键词 [卫星测高](#) [平均海平面](#) [波形重构](#) [近海](#)

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Coastal mean sea surface height by retracking ERS-1 altimeter waveform data

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Abstract A high resolution and high precision sea surface height data in the coastal region play an important role in many geodetic, oceanographic and geophysical applications. Constrained by many factors, applications of altimeter data are mostly in open sea, it is still blank in the coastal region. Base on the character of ERS-1 satellite altimetry return waveform and the investigative situation overseas, we retracked the raw ERS-1 altimeter waveform data from 1993 to 1996 using a five parameter model, focusing on the leading edge of the waveforms, with function approach. Comparison between before and after retracking ERS-1 altimeter waveform data show that retracking can improve the accuracy of estimated sea surface height and the resolution in the coastal region. The sea surface height from altimetry observations were also extended nearly to the shoreline. Re-tracked waveform data were used to derive a gridded mean sea surface in the Chinese coastal region. Some discussions about the re-tracking result and various factors that may effect retracking are made. It indicates that father research about retracking was required.

Key words [satellite altimetry](#); [mean sea surface height](#); [waveform retracking](#); [coastal region](#)

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