

1 Non-Stationary Internal Tides Observed with Satellite
2 Altimetry

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Temporal variability of the internal tide is inferred from a 17-year combined record of Topex/Poseidon and Jason satellite altimeters. A global sampling of along-track sea-surface height wavenumber spectra finds that non-stationary variance is generally 25% or less of the average variance at wavenumbers characteristic of mode-1 tidal internal waves. With some exceptions the non-stationary variance does not exceed 0.25 cm^2 . The mode-2 signal, where detectable, contains a larger fraction of non-stationary variance, typically 50% or more. Temporal subsetting of the data reveals interannual variability barely significant compared with tidal estimation error from 3-year records. Comparison of summer vs. winter conditions shows only one region of noteworthy seasonal changes, the northern South China Sea. Implications for the anticipated SWOT altimeter mission are briefly discussed.