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## Generation and paths of internal waves on a tropical continental shelf

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Through wavelet analysis of temperature and current data, and remote imaging via Synthetic Aperture Radar and True Color, internal waves were identified in the South Brazil Bight (SBB). These waves have predominant semi-diurnal tidal frequencies as well frequencies associated with cold fronts.

Through baroclinic energy flows and coarse graining kinetic energy budget calculated from results of the Regional Ocean Modeling System (ROMS), the energy cascade associated with this internal phenomenon was quantified, as well the contribution of topography in the generation of internal waves due to the instability of the internal tide.

The internal energy paths on the shelf were discretized with the correlation of sub - and supratidal energy flows with the Barotropic - Baroclinic conversion, thus identifying energy conversion hotspots by topography, and the spatial variability in the generation and propagation of internal waves.

The results indicate that while a supercritical regime of baroclinic tide generation prevails in the SBB, from the barotropic tide, with propagation towards the open sea, some regions on the continental shelf are close to a critical regime. In these areas, the lateral distance for the internal tide excursion is less than 5 km, which promotes shearing, local instability dissipation, and the generation of nonlinear internal waves. Simultaneously, in regions with a supercritical regime, subtidal frequency phenomena act as a force for internal waves towards the coast.