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Hydrodynamically-driven distribution of lanternfish larvae in the Southeast Brazilian Bight

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Abstract

This study analyzes the influence of the Brazil Current and Ekman transport on the distribution of lanternfish larvae in the Southeast Brazilian Bight during summer and winter. Larvae of 19 taxa of lanternfish were identified, and *Diaphus spp*. and *M. affine* were the most abundant. Three water masses were present in the area: Coastal Water, Tropical Water and South Atlantic Central Water. Lanternfish larvae were associated with the Tropical Water in both seasons. During summer, species of Lampanyctinae were associated with the shallowest layers and Myctophinae in the deepest layers. In winter most species of both subfamilies were associated with intermediate depths, probably because greater mixing of water masses occurred at the surface and 100 m depth, limiting their distribution. During both cruises, the presence of lanternfish larvae in the continental shelf was related to the pattern of Tropical Water intrusion, which was mostly driven by the mesoscale activity of the Brazil Current and its interaction with the continental shelf.

Keywords: Myctophidae; ichthyoplankton; mesopelagic fish; mesoscale features; vertical distribution; current meandering.