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Poster
Mean depth of mixed layer (MLD), nitrate concentrations and nitracline were analyzed at 10 °W to study the seasonal surface supply of nitrate in the tropical Atlantic between 2 °N and 10 °S. Combination of historical and recent data from CTD temperature, salinity and nitrate profiles collected during more three decades (between 1973 and 2007) in the tropical Atlantic Ocean was used to perform this study. The results reveal that in the equatorial zone despite relatively low MLDs in the cold season, a shallow mixing layer (10 > MLD > 30 m) was observed between the equator and 2 °S with average contents of 2. 06 mmol m-3 relatively high nitrate. In contrast to the 0-2 °S area, north of the equator (0-2 °N) while MLDs become shallower, nitrate concentrations decrease to very low concentration (near zero) at 2 °N in the mixed layer (ML). During the warm season, a supply of nitrates associated with deep ML are observed in the equatorial area. Along with such nitrate availability in the sea surface layer, high nitracline is reported both in the ML and below the ML. Meanwhile, nitrate concentrations are very high with a maximum of 7.8 mmol m-3 in the ML at 1 ° N and 1 ° S around 8 m depth. In areas south of the equator despite the observed deepening of the ML, low nitrate concentrations are observed with a nitracline that does not reach the ML. However, at 6 °S an increase in nitrate content (0.67 mmol m-3) followed by a sharp increase between 8 and 8.5 °S (5 mmol m-3) is noted.

Keywords: Equatorial zone; nitracline; area south of the equator; Mixing layer.
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