

Diel changes in phytoplankton pigments in the Seychelles-Chagos Thermocline Ridge region of the south west tropical Indian Ocean

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The tropical Indian Ocean (TIO) is characterized by large seasonal variability in its environmental conditions, which influence the global climate. This has lead to a growing interest in the exploration of the TIO to understand this variability and their driving mechanisms operating in this region. The South-western region of the TIO (SWTIO, 5°S to 10°S and 50°E to 80°E) is unique due to its significant sea surface temperature (SST) variability in different timescales, in comparison with the other regions of Indian Ocean. However, there are not many studies on the vertical resolution of physical-biogeochemical observations within the ocean. In light of this, we performed in situ 10 days time-series investigation to capture the variation in phytoplankton community structure at 8°S and 67°E location. Diel changes in phytoplankton pigments were monitored in south west tropical Indian Ocean. TChl-a was the most abundant pigment found which comprised of both chlorophyll a and divinyl chlorophyll a. 19' hexanoyloxyfucoxanthin and divinylchlorophyll a were the major marker pigment observed. Presence of these two pigments suggests dominance of prymnesiophytes and Prochlorococcus. Chlorophyll a exhibited sharp day and night contrast in tandem with 19'hexanoyloxyfucoxanthin and divinylchlorophyll a suggesting strong zooplankton herbivory. Marker pigments such as zeaxanthin, chlorophyll b were low and did not show any change suggesting their population presumably escaped the grazing pressure during this study.