Calcification seasonality in Sekisei Reef of the Ryukyu Islands, Japan

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Seasonality of calcification rate in Seskiei Reef, one of the biggest reef complexes in a relatively high-latitude area (24N) of reef distribution, was evaluated based on total alkalinity difference in seawater between the lagoon and the offshore. Reef calcification showed evident seasonal variation of about 8-fold difference between summer (June-September) and winter (March) corresponding to strong seasonality in seawater temperature (20-30 degC) and light intensity of the region. The alkalinity approach would be applicable for detecting the biogeochemical / metabolic response of coral reefs at ecosystem level to the global warming and future pH decrease.