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Planktic foraminifera seasonal calcification variations in the northwestern Mediterranean Sea

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Ocean Acidification (OA) is considered a major threat and is projected to impact all areas of global ocean, therefore understanding its ecological impacts remains a priority for science and management. The Mediterranean Sea is considered a highly vulnerable region, so we analyzed material coming from Planier sediment trap in order to characterize the seasonal variability of weight and calcification of planktic foraminifera. This sediment trap is located in the Gulf of Lions (GoL), in the northwestern part of the Mediterranean Sea, one of the few non-oligotrophic regions in the Mediterranean (high productivity period from January to May). We performed planktic foraminifera picking focusing on 3 different species: *Globigerina bulloides*, *Neogloboquadrina incompta* and *Globorotalia truncatulinoides*. A mean of 13 to 27 specimens per sample were picked. These foraminifera samples were then cleaned with the ultrasonication in methanol technique and then weighted using a Sartorius ME5 balance (precision= 0.001mg) in the micropaleontology laboratory of the University of Salamanca. A total of 126 samples and 2077 individuals were weighted. SBW (Sieve Based Weight) results showed that traditional used sieved size fractions do not provide enough control on the effect of morphometric parameters on the weight/calcification data, highlighting the need of a size-normalization. Area and diameter measurements were carried using a Nikon SMZ18 and a DS-Fi3 through the NIS Elements. MBW (Measured Based Weights) results showed that both of these parameters (area and diameter) have no influence on MBW values, indicating these values are good index for calcification intensity. Seasonal MBW variations differ according to the species: *G.bulloides* showed a maximum MBW values during the high productivity period, *N.incompta* reached its maximum values slightly after the high productivity period while *G.truncatulinoides* displayed a maximum calcification value during the low productivity period. Finally, we compared these results with "Optimum Growth Conditions" (Chlorophyll-*a* and species relative abundance) data.