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Seasonal Variations of Modern Planktonic Foraminifera in the South China Sea

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Although foraminiferal census and isotope analyses from sediment cores have been widely applied to paleoceanographic reconstructions in the South China Sea (SCS; $e.g.$, Wang *et al*., 1986; Wang and Chen, 1990; Wang *et al*., 1999; Tian *et al*., 2002), their modern counterparts, $i.e.$, foraminiferal shells from sediment traps and plankton tows, have scarcely been studied in this region. In this study, relative abundances of the most popular species used to reconstruct late Quaternary tropical sea surface conditions have been studied in specimens collected in tows and sediment traps in the SCS in order to offer better constraints on the interpretation of downcore records. It is interesting to find that the relative abundance of *Globigerinoides aequilateralis* is significant higher in planktonic tows and sediment traps than in sediments, indicating its proneness to the burial dissolution. Results from sediment traps show that the faunal assemblage is dominated by *Globigerinoides ruber* during the warm summer months whereas *Globigerinoides sacculifer* is consistently present year round at abundances of less than 20%. In addition to the seasonal differences, there are spatial variations in faunal assemblage from south to north of the SCS basin based on contemporary tows. *G. aequilateralis* is relatively dominant in the southern (lower latitude) basin. On the contrary, *Pulleniatina obilquiloculata*, an index species of Kuroshio Current, is only abundant in the northern part of the SCS basin. Furthermore, the relationship between the predicted δ^{18}O and δ^{13}C compositions for carbonates (foraminiferal shells) and that of seawaters is discussed.