



Recent Planktonic Foraminifera Distribution off Portugal. A Regional Transfer Function

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Quantitative and qualitative analysis of planktonic foraminiferal assemblages from 109 core-top sediment samples collected along the Portuguese margin were used to assess the lateral changes in the surface water conditions and to reconstruct the Sea Surface Temperature (SST). Q-mode factor analysis performed on foraminiferal relative abundance permits the identification of three factors that explain up to 96% of the total variance: factor 1 (52%) is exclusively defined by *Globigerina bulloides* species and reflects the seasonal coastal upwelling (May to September) in the area; factor 2 (31%) is characterized by *Neogloboquadrina pachyderma* (dextral coiling) and *Globorotalia inflata* and seems to be associated with the descending branch of the North Atlantic Drift (Portugal Current); factor 3 (13%), defined by the tropical-subtropical species *Globigerinoides ruber* (white) and *Globigerinoides tri-quadrilobus*, and *Globorotalia inflata*, marks the winter Portugal Coastal Countercurrent, with Azores Current Source waters. This data set and an eighteen year long integration of satellite SST were used to calibrate and define a regional transfer function, which was then used to compare the results from two different transfer function techniques ("Imbrie & Kipp", "SIM-MAX 28"). The simultaneous application of two different computational approaches allows the validation of the used modern samples and to identify the technique that better resolves the actual SST pattern on the Portuguese margin, especially the seasonal upwelling.