



LATE QUATERNARY PALEOCEANOGRAPHIC VARIATIONS THROUGHOUT THE PELOTAS BASIN BASED ON PLANKTONIC FORAMINIFERA ASSEMBLAGES

VARIAÇÕES PALEOCEANOGRÁFICAS DO QUATERNÁRIO TARDIO AO LONGO DA BACIA DE PELOTAS COM BASE EM FORAMINÍFEROS PLANCTÔNICOS

EMMANUEL FERNANDES THOMÉ¹, PÂMELA DE LARA PALHANO², JAIME YESID SUÁREZ-IBARRA³, CRISTIANE FRAGA FROZZA² & MARIA ALEJANDRA GOMEZ PIVEL⁴

¹Universidade Federal do Rio Grande do Sul, Instituto de Geociências, Curso de Graduação em Geologia, Av. Bento Gonçalves 9500, Porto Alegre- RS 90650-001. emmanuelthome@gmail.com;

²Universidade Federal do Rio Grande do Sul, Instituto de Geociências, Programa de Pós-graduação em Geociências, Av. Bento Gonçalves 9500, Porto Alegre- RS 90650-001. pamelalara.palhano@gmail.com, crisragafrozza@gmail.com; ³Univerzita Karlova, Praga, República Tcheca. suarezij@natur.cuni.cz;

⁴Universidade Federal do Rio Grande do Sul, Instituto de Geociências, Departamento de Paleontologia e Estratigrafia, Av. Bento Gonçalves 9500, Porto Alegre- RS 90650-001. maria.pivel@ufrgs.br

Foraminifera are important proxies for understanding paleoceanographic changes by making possible the reconstruction of complex past ocean dynamics. Since planktonic foraminifera occupy distinct niches, changes in the relative abundance of key species can be used to reconstruct specific seawater conditions. This study aims to examine latitudinal variations along the southernmost Brazilian continental margin (Pelotas Basin) during the late Quaternary (Marine Isotope Stages 1 to 3). For this purpose, we analyzed core PC-80 (32°42'S, 49°46'W), retrieved near the southern margin of the basin, and compared it with records from two other cores, namely SAT-048A (29°11'S, 47°15'W) and SIS-188 (29°22'S, 47°28'W), both retrieved at the northern part of the basin. We inferred paleoproductivity changes based on the relative abundance of *Globigerinita glutinata* (%) and the *Globigerina bulloides*/*Globigerinoides ruber* ratio. To assess paleotemperature changes, we utilized the *Neogloboquadrina incompta*/*Globigerinella calida* ratio. Finally, to estimate changes in upper water column stratification, we analyzed the abundances of *Globorotalia truncatulinoides*, dextral morphotype. *Globigerinita glutinata* displayed a similar pattern along the cores, although the range of changes was more pronounced in the southern part of the basin. Compared to core SAT-048A, the *G. bulloides*/*G. ruber* ratio in core PC-80 displayed higher values before 7 ka BP and a similar pattern afterwards. The *N. incompta*/*G. calida* ratio suggests different trends in paleotemperatures between the southern and northern portions of the basin. Conversely, similar patterns of *G. truncatulinoides* dextral (%) were detected along the cores. Our investigation of the planktonic foraminifera assemblages from sediment core PC-80, in comparison with data from SAT-048A and SIS-188, demonstrates that variations in paleoproductivity and



paleotemperature observed reflect the varied degrees of exposure to the nutrient-rich waters of the Rio de la Plata Plume and the Patos-Mirim Lagoon System, the advection of Subantarctic waters in the southern margin, and upwelling. Despite the documented latitudinal variability, similar *G. truncatulinoides* patterns suggest that water stratification conditions during spring varied in synchrony throughout the basin, as this species depends on low stratification to complete its reproductive cycle. This work contributes to our understanding of the paleoceanographic dynamics of the area by demonstrating the importance of conducting additional and comparative studies within the same large basin.

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Palavra-chave: Foraminifera, Pelotas Basin, Paleotemperature, Paleoproductivity,
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