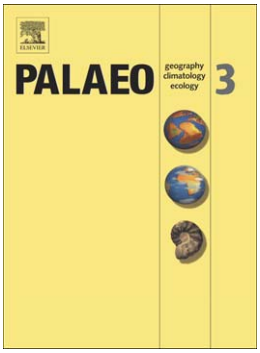

Spatial characterization of the late Sinemurian (Early Jurassic) palaeoenvironments in the Lusitanian Basin

M. Boussaha, B. Pittet, E. Mattioli, L.V. Duarte

PII: S0031-0182(14)00279-X
DOI: doi: 10.1016/j.palaeo.2014.05.023
Reference: PALAEO 6872

To appear in: *Palaeogeography, Palaeoclimatology, Palaeoecology*

Received date: 30 November 2013
Revised date: 15 May 2014
Accepted date: 22 May 2014

Please cite this article as: Boussaha, M., Pittet, B., Mattioli, E., Duarte, L.V., Spatial characterization of the late Sinemurian (Early Jurassic) palaeoenvironments in the Lusitanian Basin, *Palaeogeography, Palaeoclimatology, Palaeoecology* (2014), doi: 10.1016/j.palaeo.2014.05.023

Spatial characterization of the late Sinemurian (Early Jurassic) palaeoenvironments in the Lusitanian Basin

M. Boussaha[a]*, B. Pittet[b], E. Mattioli[b], L.V. Duarte[c]

[a] Department of Geosciences and Natural Resource Management, University of Copenhagen, Øster Voldgade 10, 1350 Copenhagen, Denmark.

[b] UMR CNRS 5276 LGL-TPE, Université Claude Bernard Lyon 1, Ecole Normale Supérieure Lyon, Campus de la DOUA, Bâtiment Géode, 69622 Villeurbanne Cedex, France.

[c] Depto de Ciências da Terra and IMAR-CMA, Faculdade de Ciências e Tecnologia, Universidade de Coimbra, Largo Marquês de Pombal, 3000-272 Coimbra, Portugal.

*Corresponding author myriam.boussaha@ign.ku.dk

ABSTRACT

The upper Sinemurian of the Lusitanian Basin (Portugal) is characterized by the deposition of carbonates (dolomitic limestones, limestones), sometimes enriched in organic matter (Total Organic Carbon up to 22%). The main goal of this study is to understand the distribution of carbonates and organic matter-rich sediments in space and time, and to characterize the context of their deposition at the basin scale. Three sections located along a proximal-distal transect in the Lusitanian Basin and dated from the *oxynotum* to *raricostatum* ammonite zones (upper Sinemurian) have been studied for their microfacies and sedimentary structures, and correlated by means of ammonite and calcareous nannofossil biostratigraphy, and sequence stratigraphy. The proximal part of the basin is dominated by carbonates whereas organic-rich sediments and marl-limestone alternations are