

[GUEX Jean](#), [MORARD Alain](#), BARTOLINI Annachiara, MORETTINI Elena

Découverte d'une importante lacune stratigraphique à la limite Domérien-Toarcien: implications paléo-océanographique

Discovery of an important stratigraphic gap at the Domerian-Toarcian limit: palaeo-oceanographic implications

In contrast with the majority of recently published hypotheses, we believe that the main trigger for early Toarcian anoxia is neither increased primary productivity during Tenuicostatum and Falciferum zones nor sudden hydrated-methane degassing close to the transition between these two zones.

In our opinion, this peculiar palaeo-oceanographic episode is linked to a major, though short-lived, regression at the end of Upper Domerian due to sudden cooling because of increased volcanic activity followed by global thermal insulation and subsequent glaciation. This regression is responsible for a major hiatus over the whole NW-European province and is later followed by the well-known Lower Toarcian transgression. The interval corresponding to this hiatus (200 to 300 ky) allowed colonisation by vegetation of vast newly emerged surfaces for quite a long period. The leaching and drowning of the accumulated organo-humic matter then triggered the anoxic cycle at the transgressive maximum, concomitant with a global warming.

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