
Dating of Quaternary deposits on the Coast of Brittany (W France) by Optically Stimulated Luminescence and Terrestrial Cosmogenic Nuclides: Preliminary results of the cronBRET Project.

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Résumé

The Quaternary record along the Coast of Brittany (W France) is well represented, offering important information about the geomorphological processes that have shaped this coast during this period. However, chronological data using numerical dating methods are very scarce leading to uncertain hypotheses put forward on the basis of correlations and extrapolations. Thanks to the cronBRET Project (MSCA-Bienvenue Bretagne COFUND 2023) from the Geo-Ocean Lab of the Université de Bretagne Sud and the RenDaL laboratory of Géosciences-Rennes (Univ. Rennes), in collaboration with the Cosmogenic Laboratory of the Institute of Geology and Mineralogy of the University of Cologne (Germany) and the Institute of Geology of the University of Coruña (Spain), numerous sedimentary outcrops along the Bretagne Coast are currently dated. For the burial age calculation, the optically stimulated luminescence (OSL) signal of quartz sands included in the sedimentary matrix is analyzed, as well as the concentration of ¹⁰Be and ²⁶Al produced *in situ*, as a consequence of cosmic-ray interaction with quartzite cobbles, by using the isochron method. The first results include those obtained in the Falaise de La Mine D'Or at Pénestin (SE Brittany), with a lower unit dated at 2.7 My (Plio-Quaternary boundary). The upper unit has been dated by OSL between 410 and 260 ky (Middle Pleistocene). As for the coastal deposits dated in Morbihan (ie, Betahon, Rhuys, Ploemeur), ages between 265 and 125 ky have been obtained. These data will be complemented with the dating of several sedimentary deposits from Brittany's West Coast (Finistère) and North Coast (Côtes d'Armor) to achieve a comprehensive analysis at regional scale. This study highlights the importance of numerical

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dating as an essential tool to constrain the formation of coastal sediments within a more accurate paleoclimatic framework and integrate them in the glacioeustatic and neotectonic processes linked to the Glacial-Interglacial cycles of the Quaternary, and more specifically during the last 500,000 years.

Mots-Clés: Coastal sediments, OSL dating, TCN dating, Pleistocene, Brittany, W France.