

Centre des Etudes Doctorales Sciences et Techniques
&
Sciences Médicales

THESIS DEFENSE

SOFIA BENAMRI

CANDIDATE FOR DOCTOR SCIENCES AND TECHNIQUES

Geological Records of the High Energy Holocene Deposits on the Moroccan Coasts

Date :	Thursday 07 december 2023
Time :	3.00 pm
Location :	Conference Room, Building F, FST - Tangier

Committe Members

Pr. Jean Luc MERCIER	US - France	Chair
Pr. Patrick WASSMER	US - France	Reviewer
Pr. Mohamed Najib ZAGHLOUL	FST- Tangier	Reviewer
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Pr. Abdelhamid ROSSI	FST- Tangier	Examiner
Pr. M'hamed ABERKAN	FS - Rabat	Guest
Pr. Khadija ABOUMARIA	FST- Tangier	Thesis Director

ABSTRACT

The study of high-energy deposits is fundamental to the assessment of natural hazards and the mitigation of their devastating effects. These deposits, which bear witness to past events, signal the vulnerability of coastal regions to extreme flooding. These extreme events also expose populations to considerable human and material losses. The aim of this work is to study the sedimentological, petrographic, geochemical and micropalaeontological characteristics of preserved high-energy deposits that have affected the Moroccan coast. This research exploits deposits in the Rabat and Tangier regions to reconstruct the history of extreme events. In the Rabat region, the deposits studied are potentially linked to a high-energy storm, revealing a complex sedimentation history involving both marine and continental phases. In the Tangier region, sedimentological and geochronological analyses of the deposits show the existence of a high-energy event dating back some 4,000 years, suggesting a regional tsunamigenic event. On the other hand, the distribution of pebbles along the Tangier-Asilah coast also elucidates evidence of extreme flooding. The placement of these pebbles could probably be due to a high-energy event such as the Lisbon tsunami of 1755. This study highlights the vulnerability of Moroccan coasts to extreme events, underscoring the importance of raising awareness among decision-makers to take adaptation and protection measures in the face of coastal hazards.

Keywords: High-energy deposits, Storm, Tsunami, Natural hazards, Sedimentology, Petrography, Geochemistry, Micropaleontology, Moroccan coasts.