Università
Ca'Foscari
Venezia

PROJECT ACRONYM AND TITLE: **WARMCOASTS - Sea level and extreme waves in the Last Interglacial**

FUNDING PROGRAMME: **HORIZON 2020**

CALL: **H2020 ERC - Starting Grant**

HOST DEPARTMENT: **Department of Environmental Sciences, Informatics and Statistics**

SCIENTIFIC RESPONSIBLE: **Alessio Rovere**

FINANCIAL DATA:

Project total costs	Overall funding assigned to UNIVE
€1.499.965,00	€883.354,00

The project has been transferred to Ca' Foscari University of Venice thanks to the portability option

ABSTRACT:

Past interglacials are periods of the earth's history when climate was warmer than the pre-industrial, and are often considered as process-analogs for a future warmer climate. During the Last Interglacial (LIG, ~128-116 ka), polar temperatures were few degrees higher than pre-industrial, ice sheets were smaller and sea level was higher than today. Studies also suggest that waves in the North Atlantic might have been more intense in the LIG than today. Understanding sea level changes and extreme wave intensity during the LIG is key to assess the future of the world's ice sheets and coastlines under warmer climatic conditions. For this reason, the LIG is the most studied among past interglacials, but recent research highlighted that the LIG is far from a 'solved problem', especially for which concerns sea level and coastal dynamics. There are in fact three relevant research gaps. First, widely accepted estimates suggest that LIG global mean sea level was 5-10 m higher than today, but recent studies proved that previously unrecognized processes concur to make current LIG sea level estimates very uncertain. Second, it is unclear if LIG sea level was characterized by rapid oscillations that caused sea level to rise abruptly at rates higher than at present (up to 10 mm per year in the LIG, compare with 3 mm per year today). A third research gap is related to the highly controversial notion that the LIG was characterized by 'superstorms', producing waves more intense than those observed today. In this project, we want to employ a multidisciplinary combination of methods to study Last Interglacial peak sea level, sea level variations and extreme waves. WARMCOASTS will develop both new datasets and merge methods from geology, earth modeling, surface processes modeling and hydrodynamic modeling to advance the current state-of-the-art. The results of this project will be functional to better understand coastal processes under slightly warmer climate conditions.

Planned Start date	Planned End date
1st November 2021	1st April 2025

PARTNERSHIP:

1 MARUM, Center for Marine Environmental Sciences, UNIVERSITY OF BREMEN	**Bremen (DE)**	**Coordinator**
2 Università Ca' Foscari	**Venezia (IT)**	**Partner**