



G L  M A R

Ph.D. Defence



Karla
Rubio Sandoval

Title of the Thesis Colloquium:

**A History behind the Data:
Sea Levels in a Warmer World**

8 May 2024 - 17.00 hrs.
GEO building, room 1550
and online via Zoom

A History behind the Data: Sea Levels in a Warmer World

Global mean sea levels have been rising since the last century; this trend is expected to continue as the planet faces a warmer future. However, the rate and magnitude of this rise remain subject to debate, making decisions about land use and coastal management difficult.

Sea level changes are not linear. In fact, they are driven by an intricate relationship between eustatic (i.e., global), isostatic, and local factors through time. Therefore, there is a clear need for precise and accurate data covering various spatiotemporal scales. Quaternary sea-level records offer valuable data to improve our understanding of these complex sea-level dynamics and enhance the predictions of future sea-level scenarios. In particular, interglacial records provide sea-level variability data under warm climate conditions. Marine Isotope Stage 5 (~125 to 80 ka) represents the most recent interglacial period when the Earth's climate was warmer than the pre-industrial, and the sea level was higher than today, leaving geological and biological traces of rising sea levels around the world. Especially, the southwestern Atlantic is considered a hot spot for past sea-level dynamics due to the abundance and preservation of sea-level indicators.

This colloquium aims to provide an overview of the state-of-the-art of sea-level research in this broad region, provide context on the accuracy of published data from the Pleistocene to the Holocene interglacials, discuss the uncertainties surrounding them, and propose new methodological approaches to improve the interpretations.