UNIVERSITY OF Southampton

Is the rate of sea level rise accelerating?

Dr Ivan Haigh

University of Southampton

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Lanchester building (7/3023 (L/R E))

Highfield Campus

Synopsis:

There is observational evidence that global mean sea levels are rising and there is concern that the rate of rise will accelerate, significantly threatening growing coastal communities. In the first part of this talk I will provide an overview of the significant progress that has been undertaken in recent years in describing and understanding global-mean sea-level rise. Results from direct measurements of sea level made by tide gauges over the last two centuries and altimetry data collected over the last two decades will be presented, outlining the advantages and disadvantages of both dataset and the recent progress made in reconstructed global trends by combining both datasets. I will then put these 'modern' observed changes in mean sea level in a historic context, by comparing the changes with variations in sea level inferred from in-direct measurements made from salt marshes and geological and archaeological data over the last several thousand years, last 500,000 thousand years and then over millions of years. I will then review estimates of sea level rise projections for the coming century. In the second part of the talk I will focus on the challenges that remain in understanding past and future sea-level rise and variability, discussing the need to: (i) improve understanding of regional departures of sea level trends from the global-mean rates; (ii) provide probabilistic sea level projections; (iii) more accurately determine the full range of possible future sea level rise projections, in particular the low probability but large impact scenarios, such as H++; and (iv) detect a significant increase in the rate of sea level rise as early as possible to trigger the public and thus the political motivation for action, and to enable adequate adaption.

Dr Ivan Haigh is a Lecturer in Coastal Oceanography in Ocean and Earth Science, National Oceanographic Centre, Southampton. He has worked on a wide range of projects in both industry and academia covering many different aspects of coastal oceanography, with a particular focus on sea-level rise and coastal flooding.