IHE Delft is the largest international graduate water education facility in the world and is based in Delft, The Netherlands. The mission of IHE Delft is to work in partnership to strengthen capacity in the water sector, to achieve global sustainable development. IHE Delft has a permanent staff of 220 of which more than 140 are academics from all over the world, while about 250 guest lecturers from academia and industry contribute to our educational programmes. Each year 750 professionals (including about 200 new MSc students per year) from all over the world attend various water-related courses at IHE Delft. The Institute has an international staff & student community with English as the working language.

The Department of Coastal and Urban Risk & Resilience (CURR) conducts research, undertakes advisory/capacity development projects and provides post-graduate education and training to professionals in the fields of coastal systems engineering & port development, climate change impacts & coastal risk, and flood resilience – with each of these research lines headed by a Professor. To support mainly the climate change impacts and coastal systems engineering research/project/education activities of the department we are currently looking for a:

**PhD Candidate in Extreme Sea Levels and Global Warming**

38 hours per week

Developing new knowledge, tools and databases related to coastal hazards is a key activity of CURR. Coastal flooding is one of the 3 key coastal hazards identified in the IPCC AR6 WGI report, with projections indicating that coastal flooding will increase in almost every region of the world, and particularly in the global south. Extreme Sea level, defined as the combination of mean sea level, tides, storm surge and wave setup/runup, drives episodic coastal flooding. Under present conditions, the 100 year return period extreme sea level (ESL) is estimated to affect 76 million people worldwide. The IPCC AR6 WGI report states with high confidence that coastal flooding will increase through the 21st century, with the present-day 100 year ESL event occurring about once every 5 years by mid-century, and turning into a more than once per year occurrence event by end-century, under a high emission scenario (RCP 8.5).

Chapter 12 of the IPCC AR6 WGI report identifies several major gaps in our current understanding of ESLs and consequent coastal flooding. These are:

- ESL Projections to date are all by climate scenario and not by global warming level (GWL), which presents somewhat of a dichotomy in relation to projections of all other climate extremes (e.g temperature extremes, precipitation extremes) which are available by GWL for different return periods/thresholds, especially following the Paris Agreement for climate mitigation.
- All currently available comprehensive coastal flooding projections and consequent impact assessments are by scenario. There are no ongoing efforts to derive coastal flooding projections by GWL in a comprehensive way.
- To date, there are no detection & attribution studies for ESL.
- To date, there are no emergence studies for ESL

The proposed PhD project aims to address all of the above knowledge gaps using a combination of big data analysis and numerical modelling.
Responsibilities

The successful candidate for this position will carry out a PhD study on “Emergence, D&A of Extreme Sea levels and their dependence on Global Warming Levels”.

The candidate will work within a team of researchers at IHE Delft, Deltares and in close collaboration with the Lawrence Berkley Laboratory, USA.

Requirements

The successful candidate must have a BSc in Civil Engineering (or similar) and an MSc preferably in Coastal engineering or Hydro-Informatics, with the following skills/experience:

- Advanced (MSc level) knowledge of coastal processes and coastal numerical modelling;
- Have a keen interest in climate change impacts on coasts;
- Experience in working with big data (continental or global data sets);
- Excellent and proven programming skills and aptitude with Matlab and Python;
- Advanced skills in ArcGIS or QGIS;
- Excellent communication skills in English.

Terms of employment

The employment contract is for 1,0 fte / 38 hours per week. P-Scale Collective Labour Agreement for Dutch Universities (VSNU).

The position is based in Delft, The Netherlands, with short missions abroad. A competitive salary is offered depending on qualifications and experience in accordance with the conditions of employment for Dutch Universities. The appointment implies entry into the Netherlands' Civil Service Pension Fund (ABP).

IHE Delft offers an attractive, multiple-choice employee benefits scheme, year-end bonus and generous pension scheme. We also offer 31 days leave based on a 38 hours working week.

Information and application

Additional information can be obtained from Rosh Ranasinghe (r.ranasinghe@ihe.org).

Applications (in English), should respond specifically to the requirements and can be sent until March 28, 2022 (closing date) including curriculum vitae, motivation letter, and the names and contact details of two contactable referees (as one PDF file with your family name as the filename), to IHE Delft Institute for Water Education, attn. Human Resource Management (E:recruitment@un-ihe.org), PO Box 3015, 2601 DA Delft, The Netherlands, stating vacancy-number 22-CURR-01.

By submitting your application for the vacancy of PhD Candidate in Extreme Sea and Global warming systems, you agree with the privacy statement below:

The personal data you share through your application file and other means will only be used by IHE Delft for the purpose of the recruitment and selection process in order to evaluate your suitability for the vacancy for which you have applied, as well as for communication purposes related to the vacancy. IHE Delft will process your personal details in accordance with the EU General Data Protection Regulation of 25 May 2018. For more information, we refer you to the privacy statement of IHE Delft: https://www.un-ihe.org/privacy-statement

Without your prior consent or other legal bases, no information will be shared with third parties. For further questions please contact our Data Protection Officer at dpo@un-ihe.org

Reactions from staffing agencies and other 3rd parties are not appreciated.