

# SAR observations: coastal monitoring of beach disasters

## Introduction

Anthropogenic activities and climate change lead to a significant risk on coastal environments, with severe ecological, economical and societal consequences. Coastal settings and infrastructures suffer from different degrees of damage depending on the natural event and on the characteristics of the beaches facing them. It is currently not yet known whether it is possible to find a causal relation between these phenomena in order to detect coastal evolution and improve predictions able to adapt to climate change.

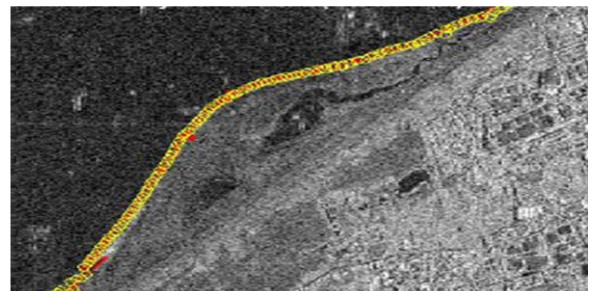
SAR satellite sensors allows a continuous monitoring of the coastal area, which is a highly dynamic natural system strongly dependent on atmospheric conditions and on human. Several studies demonstrate the ability of different SAR sensor configurations (wavelength, polarization, incident angle) to discriminate soil parameters and terrain morphology. Their potential to get this information on sandy area is currently investigated.

## Research goals:

The aim of this research project is the detection of changes on coastal environments after intense weather phenomena or anthropic activities by exploiting Sentinel-1 data. You will generate time series and improve detection tools (eg. Google engine) to identify coastal changes. This may be crucial to understand if we are able to monitor beach changes, especially when not easily accessible to man, through time using C-band data.



*Westkapelle beach (NL) after an intense storm in February 2020*



Sentinel-1 coastal monitoring over the Dutch coast

## Details

The full details can be decided in a discussion between the supervisors and the student before the project is started.

## Your profile

We are looking for a candidate with an interest in the analysis of SAR data and application in Coastal monitoring and change detection.

## Informatie:

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