University of Twente, Water Engineering and Management
Enschede, The Netherlands.

PostDoc position ‘Airflow patterns over urbanized beaches’
(2 years, 0.8 fte)

Background
The advertised position is part of a collaborative research project, ShoreScape, that aims to
develop knowledge, tools and design principles to support a sustainable co-evolution of the
natural and built environment along sandy shores. In this project, the Water Engineering
and Management group of the University of Twente (leading the project), collaborates with
the Urbanism group of the Technical University of Delft as well as project partners from
industry and coastal authorities. The postdoc research will be executed at the University of
Twente. Next to the postdoctoral position, the project includes two PhD positions, one at
University of Twente and one in Delft.

JOB DESCRIPTION
An element that has been overlooked so far in current ‘building-with-nature’ approaches to
protect urbanized coastlines, is the interaction of sediment flows with the built environment
at the land-sea interface, creating new conditions for both sediment dynamics and urban
settlement. On sandy shores, these sediment dynamics mostly relate to wind-driven
morphodynamics.
The main task for the postdoc is to characterize and understand airflow patterns induced by
various lay-outs of built environment in front of and/or on top of coastal dunes, especially in
the region where the airflow affects the sediment transport. The results, which you are
expected to publish in high standard scientific journals, will be used in the linked PhD
project at the University of Twente on modelling coastal landscape evolution at the land-sea
interface including the built environment. Hence you are expected to collaborate with the
PhD candidate to integrate the insights on airflow patterns over built environment into the
landscape evolution model.
The envisioned approach includes a combination of CFD modelling, for which you can
collaborate with one of the project partners, and field studies. For the field studies you are
expected to develop a stereo video imaging application to map air flow patterns around
real-world beach hut arrays in front of the dunes in a field-scale PIV approach. You will be
responsible for designing and organizing these field experiments.

YOUR PROFILE
We seek a talented, enthusiastic and inventive researcher with broad interests covering
fieldwork, video imaging and CFD modelling. Candidates should have a background in or
affinity with coastal aeolian morphodynamics and/or urban aerodynamics. We consider it
important that the candidate is able to put his/her research in a broader perspective, both
in relation to other scientific disciplines and in relation to every day practice of coastal
management.
Candidates should hold a PhD degree in the field of Aerodynamics, Fluid dynamics, Aeolian morphodynamics, or a related field. In particular we are looking for candidates who combine experience in CFD modelling with experience in experimental work or video imaging. He or she should have an excellent command of the English language and strong communication skills. The foreseen field experiments during certain periods in the project require personal flexibility in terms of being able to go into the field for 2-3 days whenever the wind conditions are right. To facilitate field experiment logistics, having a driving license is a plus.

OUR OFFER
We offer a 2 year 0.8 fte postdoc position in a stimulating scientific environment, where you will join an enthusiastic research team. Under specific circumstances, a shorter period (19 months) full-time position will be negotiable.
In accordance with the Collective Labour Agreement for Dutch Universities the gross monthly salary for this position will range from € 3111,- to € 4084- (based on a fulltime employment), depending on your experience and qualifications. The University of Twente provides excellent facilities for professional and personal development, a holiday allowance, an end-of-year bonus, and a number of additional benefits.

APPLICATION AND MORE INFORMATION
To apply for this position use the link below and include your cover letter, resume, list of publications, and contact information of two references that may be consulted, no later than Friday September 8, 2017. Selected candidates will be invited for interviews on the 3rd or 5th of October 2017. For foreign candidates we foresee interviews over Skype.
For more information about this vacancy you can contact dr. Kathelijne Wijnberg, (k.m.wijnberg@utwente.nl (replace & by @), telephone: +31 (0)53 - 489 4701). More information about the Water Engineering and Management Department is available at https://www.utwente.nl/en/et/wem/. The project will start a.s.a.p. after a suitable candidate has been selected.

https://www.utwente.nl/en/organization/careers/vacancies/!/vacature/1140613