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TU Delft
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Report on Research Project under the IDEA League Student Grant

Personal Information			
Full Name		Riteco, Jonas	
Field of study		Civil Engineering	
Degree pursued		Master	Current year of studies 5
Home university		ETH Zurich	
Sponsoring professor at home university	Name	Prof. Dr. Ioannis Anastasopoulos	
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Information about the research stay			
Host university		Technische Universiteit Delft	
Research topic		Effects of water infiltration on soil erodibility	
Dates of research stay		From	To
		20.02.2017	26.06.2017
Sponsoring professor at home university	Name	Dr. Ir. Myron van Damme	
	Email	M.vanDamme@tudelft.nl	

Summary of research project (200 words max.)
<p>This study aims to prove thoughts in the erodibility of sand under the influence of water infiltration by means of experiments performed at the laboratory of fluid mechanics at the Delft University of Technology. First a new process based erosion equation for dilatant material under the influence of high flow velocities is under development. For the experimental part a water tank set-up with a double bottom was created to be able to apply a water pressure at the bottom of a well-defined sand layer. Infiltration is then generated by introducing a head difference between the top and the bottom of the sand layer. With a tube connected to the double bottom of the tank the water pressure and the associated infiltration rate was regulated. The water head on top of the sand layer was kept constant. Determining the erodibility of the soil was done with a submerged jet erosion test (JET). The scour depth development was recorded over time and later processed into data sheets. This was repeated for several different infiltration settings. Afterwards, based on two different analytical methods, the Blaisdell Solution and the Scour Depth Method, the critical shear stress and the erodibility coefficient were determined.</p>

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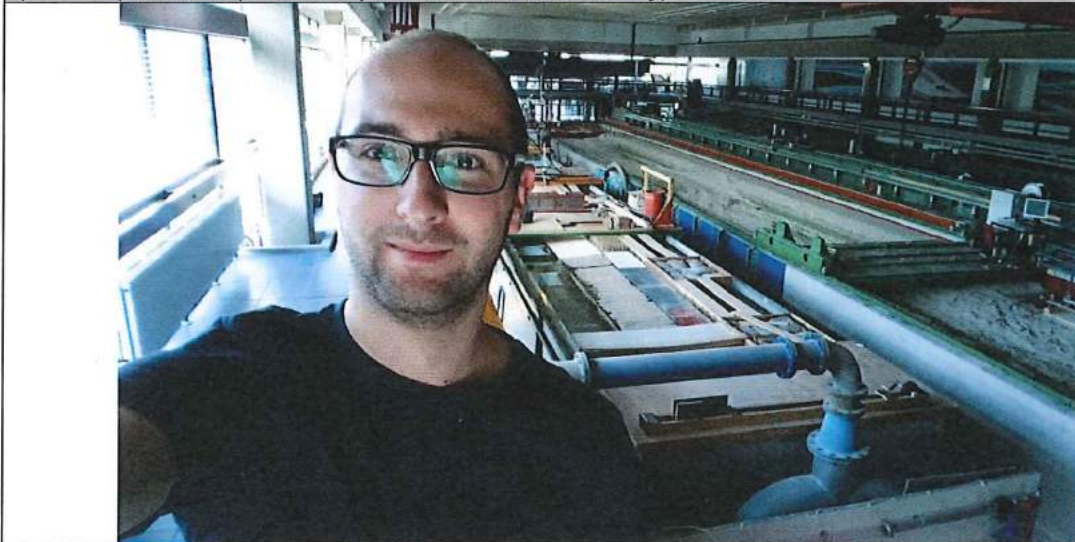
Experience Report

(Please tell us about your personal experience at the host university and give us an evaluation of the benefits of the research stay for the course of your studies)

My supervisor at the TU Delft was very kind and helpful, which made the start of the thesis very easy. One thing that is really important is to start early with your experiment if you are conducting one. During the set up phase of the experiment you will have to rely on other people to do things which might take a long time. During the spring semester there are a lot of public holidays in the Netherlands and therefore the university is closed which should be included into the time management. Apart from some time issues I however had a great time at the TU Delft and the laboratory of fluid mechanics in specific. The benefits in doing my master thesis on the subject of effects of water infiltration on soil erodibility is the huge experience of the TU Delft in water management, hydraulic and dredging engineering. The laboratories are well equipped and whenever I could not explain certain results there was always someone I could turn to right at the university.

Picture

(Please provide a picture of you at the host university)



The report should be signed by both professors involved. The signatures will be deleted when the template is published on the IDEA League webpage.

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