Finite element analysis of levee stability for flood early warning systems

Melnikova, N.B.

Citation for published version (APA):

General rights
It is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), other than for strictly personal, individual use, unless the work is under an open content license (like Creative Commons).

Disclaimer/Complaints regulations
If you believe that digital publication of certain material infringes any of your rights or (privacy) interests, please let the Library know, stating your reasons. In case of a legitimate complaint, the Library will make the material inaccessible and/or remove it from the website. Please Ask the Library: https://uba.uva.nl/en/contact, or a letter to: Library of the University of Amsterdam, Secretariat, Singel 425, 1012 WP Amsterdam, The Netherlands. You will be contacted as soon as possible.
Chapter 10 Acknowledgements

First of all, I would like to express my deepest gratitude to my promoter, Peter Sloot - a bright scientist and an enthusiastic optimist, for giving me the opportunity to extend my horizons and for introducing me scientific life at large. I am very grateful to my Russian supervisor, Valeria Krzhizhanovskaya, for inviting me to participate in the international research project, guiding me through the research field and helping me use writing and presenting to make a strong case. I would like to thank the Ph.D. committee members: Alexander Boukhanovski, Marian Bubak, Cees de Laat, Robert Meijer and Nikolay Shabrov, for their efforts in assessing this thesis and for their helpful comments.

I express my deep gratitude to David Jordan (HR Wallingford), a co-author of my paper on the IJkDijk breach experiment, for very fruitful cooperation in the UrbanFlood project. During preparation for the IJkDijk South levee prediction contest, David has clearly demonstrated English principles of fair play by sharing his soil assessment results with us. Our prediction of the IJkDijk slope failure (which has become a winner of the contest) employed soil parameters derived by David from the field and lab tests results provided to the contestants.

I would like to thank my colleagues who were “in the same boat” with me working on their theses in the UrbanFlood project and in ITMO: Alexander Pyayt and Christiaan Erdbrink, for their help in my daily work and for sharing efforts in planning and organizing the defence ceremony. I separately thank Alexander Pyayt for our productive co-operational work on developing and testing the hybrid approach employing artificial intelligence analysis in junction with finite element modelling. Together we have carried the research described in Chapter 7 and published a conference paper on this topic.

I sincerely thank my colleagues within the UrbanFlood project who helped me at different stages of my work: Andre Koelewijn (Deltares) – for supplying me with lots of valuable data on the monitored sites and for his expert-level consultations; Marek Kasztelnik, Tomasz Bartyński (Cyfronet) – for their work on wrapping the Virtual Dike module at the stage of integration into the common information space; Jeroen Broekhuijsen – for providing connection to live sensor data for the whole EWS components, including Virtual Dike as well; Gleb Shirshov – for his assistance in porting the module to computer cloud Sara.

I’d like to thank Bernhard Lang and Denis Shevchenko (Siemens) for their cooperation in a cross-validation analysis between Virtual Dike and Plaxis, performed for the Boston levee site. Many thanks go to Denis Shevchenko, for his efforts in the cross-validation study; some of his results from the open-access UrbanFlood deliverables (Krzhizhanovskaya et al., 2012) were briefly presented in Chapter 5.

I express my gratitude to Alexander Boukhanovski (eScience Research Institute of NRU ITMO) for giving me the opportunity to work in one of the most advanced supercomputer labs of Russia and for a strong financial support of my work. His brilliant erudition in the field of applied mathematics and intelligent computational technologies is my great admiration.
And I would also like to thank my chief at the Polytechnic University (Saint-Petersburg), Nikolay Shabrov, for his attention to my research work, for his empathy and comprehension when scheduling my work in Polytech during past four years.

I thank my friends (Elena, Lubov’, Alexander) for their constant emotional support and encourage.

My biggest thanks go to my family, particularly to my son Vladimir, whose love, openness and thirst for knowledge ever inspire me so much.

Let me also mention that history and culture of the Netherlands, with its heroic experience of conquering land from the sea and beautiful paintings of Dutch landscapes, have been my great admiration and a source of real inspiration for me.