
MPM-DREDGE – External Workshop

Monday, 8 December 2014, 13⁰⁰–17⁰⁰

Venue

University of Cambridge, Engineering Department, Board Room (Baker Building, 2nd floor)

Programme

13.00	Opening and Welcome (Kenichi Soga)
13.00 – 14.00	Chairman: Kenichi Soga (University of Cambridge) <u>PIETER VERMEER & LARS BEUTH (DELTAES)</u> , CHRIS DYKSTRA & WALTER JACOBS (BOSKALIS) <i>Large-strain creep-consolidation analysis of a long-term experiment on ultra-soft material</i>
14.00 – 15.00	<u>KENICHI SOGA (UNIVERSITY OF CAMBRIDGE)</u> <i>Modelling submarine landslides</i>
15.00 – 15.30	Coffee Break
15.30 – 16.15	Chairman: Hans Teunissen (Deltares) <u>FRANCESCA CECCATO (UNIVERSITY OF PADOVA)</u> <i>Simulation of CPT in partially drained conditions with the two-phase MPM</i>
16.15 – 17.00	<u>MARIO MARTINELLI & ALEXANDER ROHE (DELTAES)</u> <i>Soil-water interaction and phase-transition with MPM</i>
17.00	Closure (Alexander Rohe)

MPM-DREDGE

MPM-DREDGE is an Industry-Academia Partnerships and Pathways (IAPP) project funded from the 7th Framework Programme (FP7/2007-2013) of the European Commission under grant agreement PIAP-GA-2012-324522. The project is a collaboration of the University of Cambridge and Deltares and is supported by the dredging industry (i.e. Royal Boskalis Westminster, Van Oord Dredging and Marine Contractors, Dredging International and Jan de Nul).

Project Description

The aim of the MPM-DREDGE project is to develop, validate and demonstrate a numerical tool for the modelling and simulation of dredging applications. It is aimed to solve the numerical issues associated with large deformations and fluid pressures that occur in the interaction between soils and fluids. This effort will result in a joint computer code of the contributing participants. To model soil-fluid interaction the material point method (MPM) is the preferred option in the current project.

The main focus will be on the modelling of soil-fluid interaction problems related to the following three dredging applications: dropping of geocontainers with interaction between pore water and open water; liquefaction and (submarine) flow slides including the dredging of soils; and erosion and scour around offshore and near-shore structures.

