UNIVERSITY OF CAMBRIDGE
Department of Engineering

GEOTECHNICAL SOCIETY

Improving reliability of filters in dams and flood embankments: a particle scale perspective

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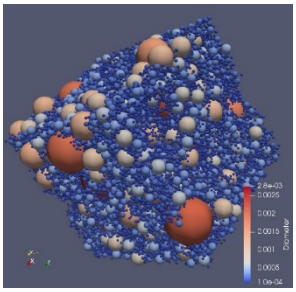
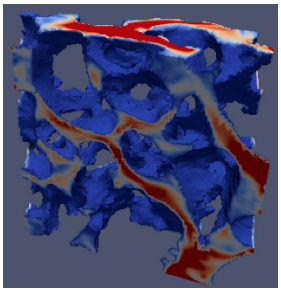
Seminar overview:

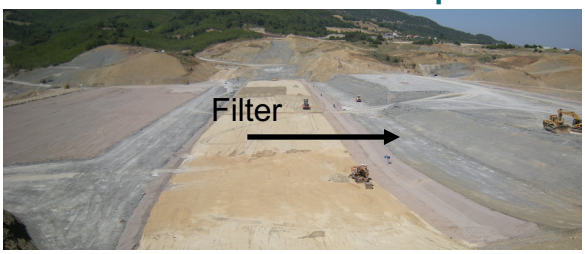
Filters are key elements of embankment dams and flood embankments. Their function is to minimize risk of internal erosion. Much of the design guidance on filters is highly empirical and includes hypothetical conjunctures regarding the mechanisms involved. The International Committee on Large Dams (ICOLD) has recently issued a bulletin on internal erosion (ICOLD, 2015). This presentation uses particle scale analyses (discrete element method (DEM) modelling and computational fluid dynamics (CFD)) to look in detail at the functionality of filters as specified in the ICOLD bulletin. Considering filters at this scale provides an improved scientific basis for engineering design.



DEM model of filter



CFD simulation of fluid flow in filter pores



Paraperios dam - May 26 2010

Biography:

Prof. Catherine O'Sullivan obtained her undergraduate degree at University College Cork, Ireland and her PhD at the University of California, Berkeley. She has been a member of staff at Imperial College since 2014. She has contributed to over 80 publications in international journals most of which focus on soil behaviour at the particle scale. She delivered the 2015 Géotechnique lecture

When and where:

Wednesday, 28 Nov, 19:00
Kayens Hall, King's College

Queries:

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