Hills and dams made of sand: adventures in geospatial and engineering education

Assoc Prof Tony Moore and Dr Greg Leonard

School of Surveying, University of Otago

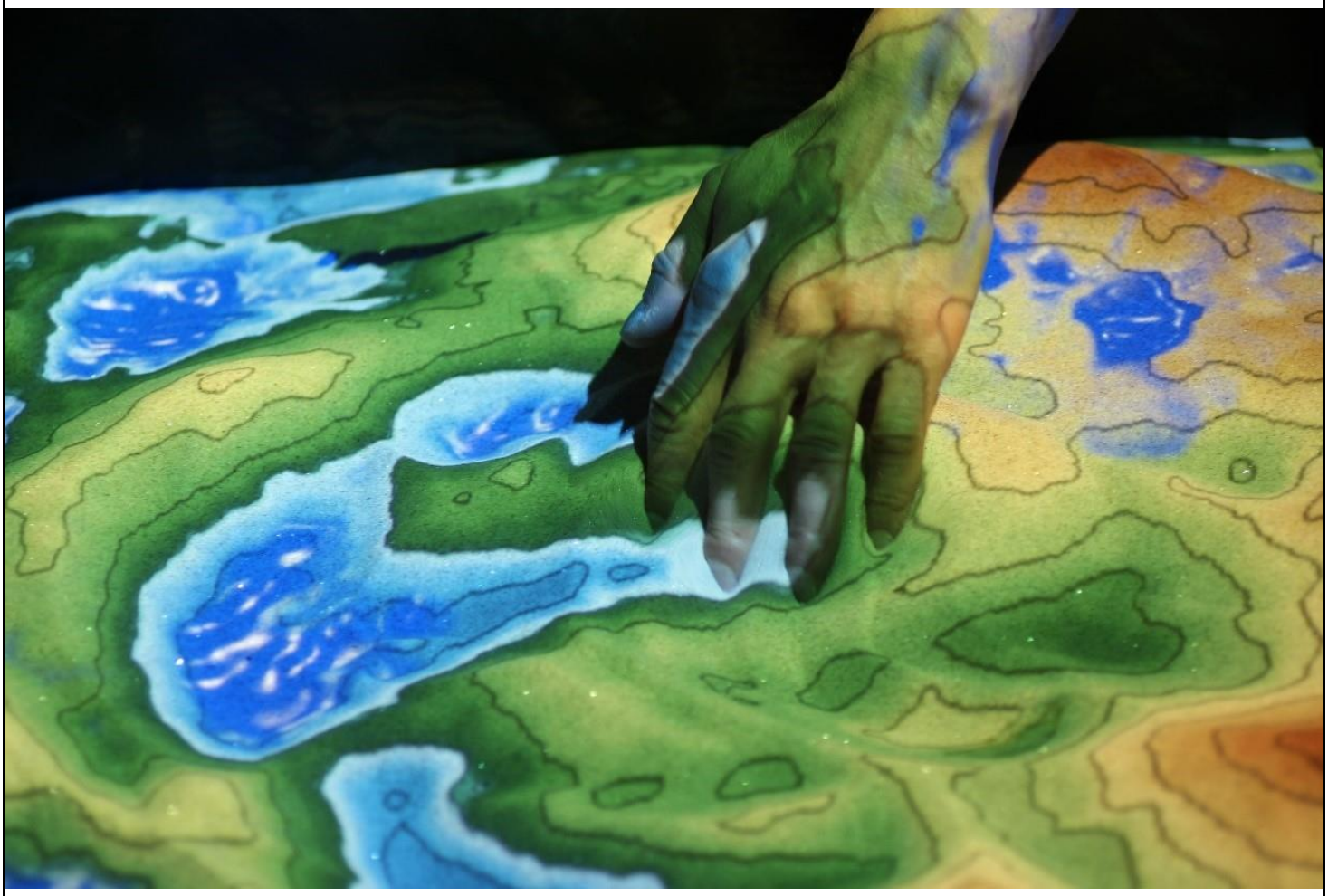

Photo credit: Steven Mills

Abstract:

An Augmented Reality (AR) sandtable is a visually-rich tool that allows users to tangibly interact with a landform. It is made up of a box filled with sand that is overhung by a 3D camera sensor and a digital projector. The sensor measures the distance to the sand surface and sends this information to a computer that constructs and renders a topographic surface (e.g. as hypsometrically-coloured contours), which it feeds to the projector so that it can be displayed it on the surface of the sand. This whole process takes place in near-real-time such that changes in the continuous surface due to the re-arrangement of sand only lag the physical changes by a fraction of a second. Here we present the Otago AR Sandtable and describe how it has been used in two recent studies to assess its usability as a teaching tool in support of terrain analysis and hydrological modelling. There will be time at the end of the presentation for members of the audience to try their hand at using the sandtable to model potential effects on South Dunedin stemming from sea level rise.

School of Surveying
Te Kura Kairūri

12:00 noon, Thursday, 21 March 2019
L1 Lecture Theatre
School of Surveying
310 Castle Street

University of Otago
Te Whare Wānanga o Otāgo
NEW ZEALAND