

Public Lecture

“The Discrete Charm of Geometry”

Never Stand Still

Science

School of Mathematics and Statistics

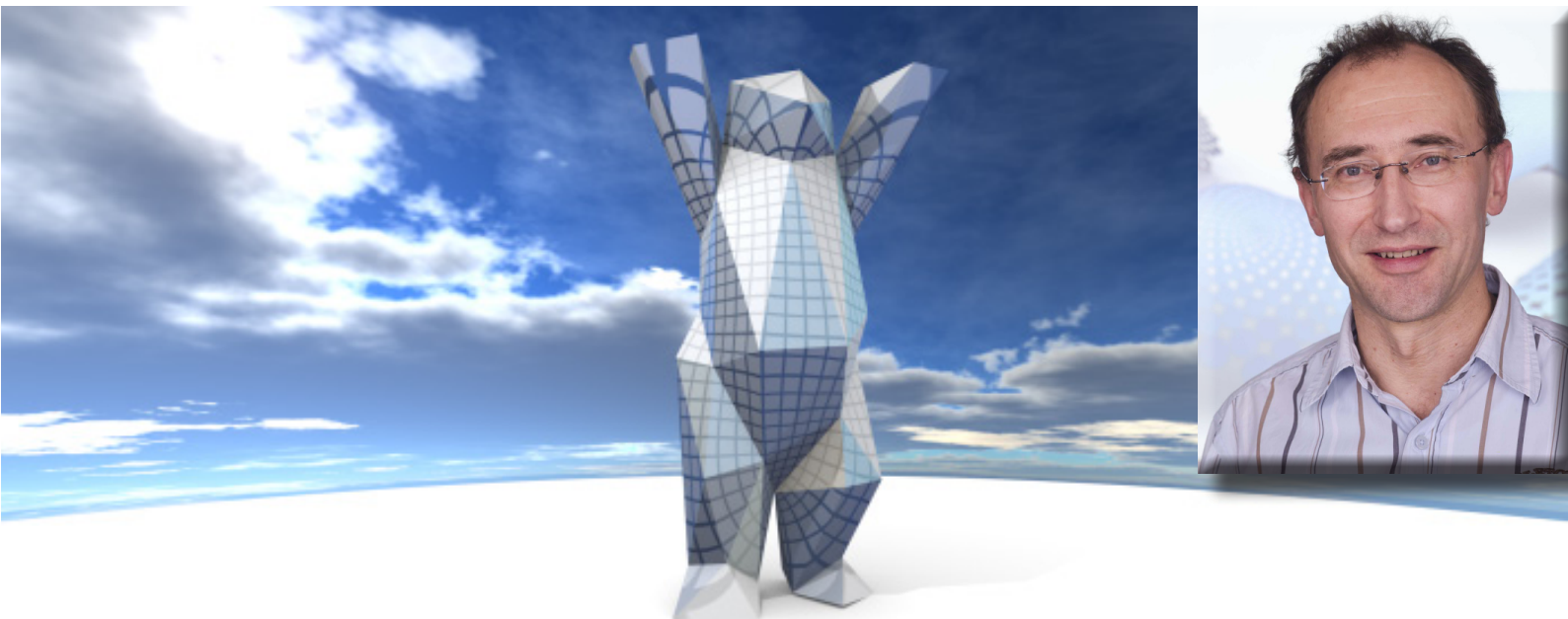
Join us for this free public lecture, presented by Professor Alexander Bobenko of Technische Universität Berlin.

Date: Tuesday 28 July

Time: 5.30pm

Venue: Tyree Room, Scientia Bldg, UNSW (map ref: G19)

Register via: www.maths.unsw.edu.au/events/2015-07/discrete-charm-of-geometry



Discrete geometric structures (points, lines, triangles, rectangles, polygons, etc.) are ubiquitous in everyday life, ranging from visible sophisticated freeform structures in contemporary architecture to hidden geometric algorithms in computer generated imagery. On the other hand, discrete geometric structures have also proven to be very useful in modelling and approximating continuous shapes (e.g. curves and surfaces) and real processes. This lecture provides a non-technical and pictorial introduction to the foundations of a new branch of mathematics which underpins these real world situations.

By way of simple and concrete examples, we will illustrate the paradigm of so-called structure-preserving discretisations. These include toy spinning tops, elastic rods, smoke rings and vortex lines in fluids, conformal texture mappings in computer graphics, free form glass and steel structures, and animations from Hollywood movies. We will also show excerpts from a new computer-animated movie entitled “conform!”. It will be demonstrated that the difference between the continuous and discrete models in geometry and dynamical systems theory is hardly noticeable.

Our aim is to convince you that this new branch of mathematics is both (literally) beautiful and useful.