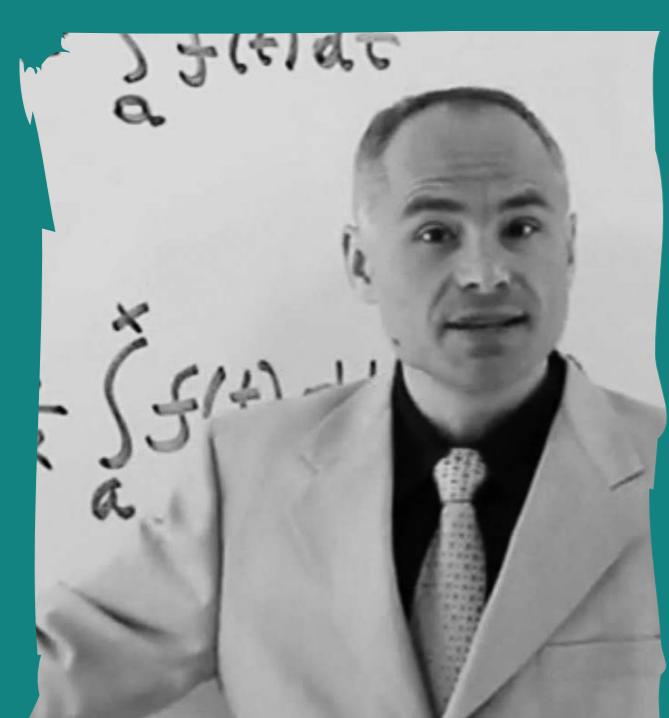


Guest Lecture: The Microscopic and Macroscopic World of Two Dimensional Piecewise Isometric Systems

Professor Arek Goetz

Wednesday, 1 June 2016, 4pm

Streatham Court C. Refreshments will be available before the presentation



In daily life, as well as in all sciences, we often deal with situations in which the same rule is applied repeatedly to objects from some space. The mathematical research in dynamical systems focuses on idealised theoretical models of scientific phenomena, in which a rule called a function is applied indefinitely. Tracking the behaviour of objects unravels a rich landscape of phenomena such as chaotic or quasi-repetitive behaviour.

In this talk we illustrate a dynamical system and demonstrate how in the plane a simple mathematical rule T , the collection of two or three rotations, applied repeatedly to points in the plane leads to mosaics of polygons revealing its complexity and beauty under magnification.

The talk will be accessible to an audience without a background in dynamical systems, and will be the first lecture from The David Rees Distinguished Visiting Fellowship scheme.

Professor Arek Goetz is an active researcher in Dynamical Systems, an academic instructor, and an e-learning entrepreneur. He also holds a tenured full professorship at San Francisco State University. Educated in Poland and the US, Goetz graduated from the University of Illinois at Chicago in 1996 with a doctoral degree in pure mathematics. Since then he held visiting positions at Boston University, the University of Exeter, University of Aix-Marseille, Institut des Hautes Études Scientifiques (IHES) in France, and Instituto Nacional de Matemática Pura e Aplicada (IMPA) in Brazil.

A recipient of two National Science Foundation Grants for his research in Dynamical Systems with geometric singularities, he has delivered over a hundred research talks at conferences and universities worldwide. An experienced academic instructor, Goetz is also the founder of Mangoroot, a multimedia internet platform for communicating and learning Calculus over the internet. The platform has been used to successfully engage calculus students in the US, Middle East, and Asia. His passion to convey mathematics to his students takes him to remote places on the planet such as glaciers and volcanoes as part of his online teaching courses.