Berlin Mathematical School

BMS Friday Colloquium

Friday 13 January 2017 at 14:15
Tea & Cookies starting at 13:00

BMS Loft, Urania, An der Urania 17, 10787 Berlin

Dietrich Stoyan
(TU Bergakademie Freiberg)
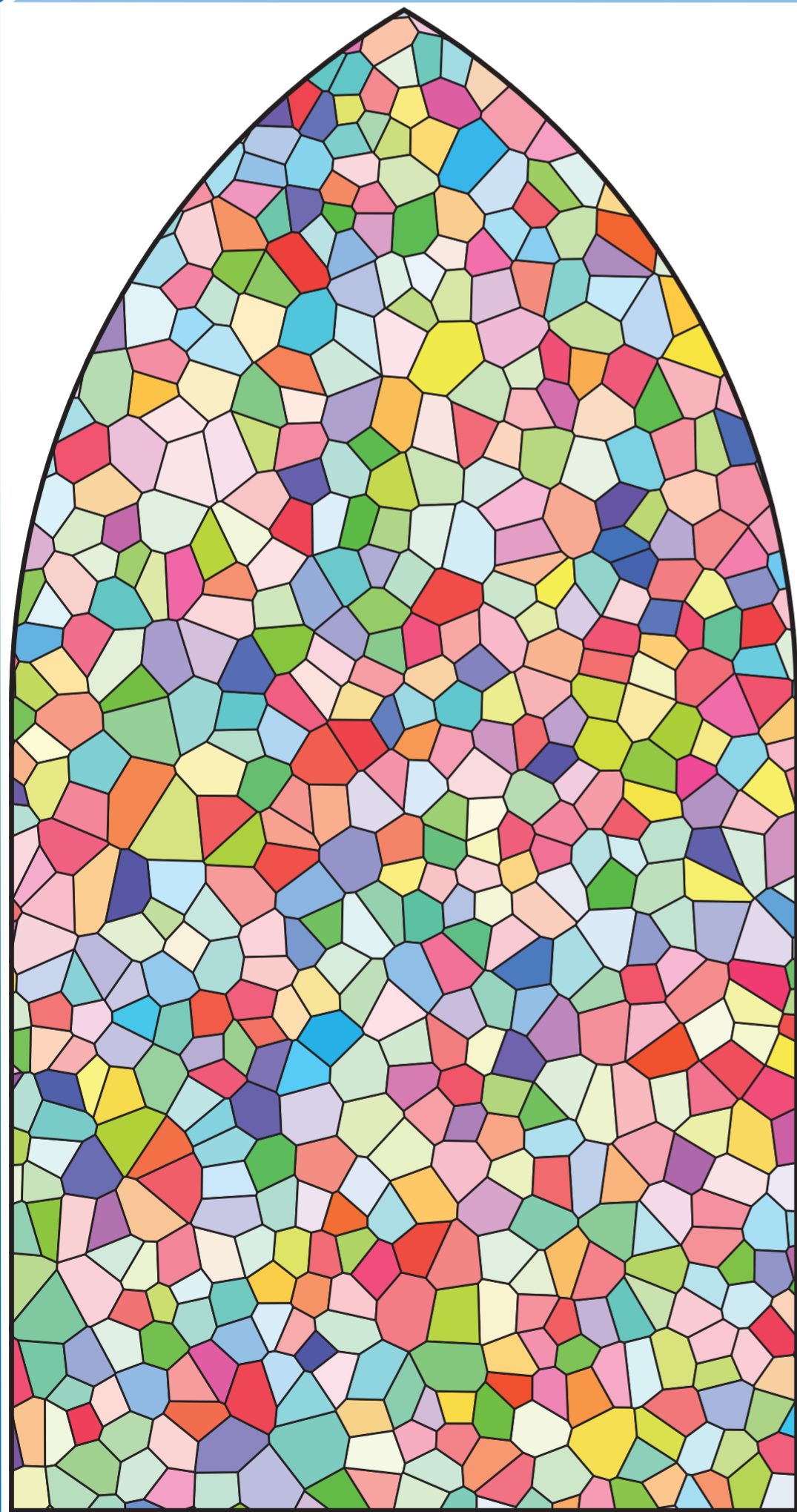

© Ute Hahn , Aarhus (Denmark)

Stochastic Geometry in Nature, Arts and Design

Stochastic geometry studies random geometric patterns. Examples are: point processes, line processes, random sets, and random mosaics. These structures are models of structures in materials science, physics and biology. The mathematical theory aims to develop formulas for model characteristics and efficient simulation methods. Statistical methods exist for the analysis of real structures with the aim to understand these.

In his talk, Stoyan will speak about mosaic models in the context of crystal growth and the formation of the universe. He has observed that similar patterns have also appeared in modern and contemporary art and design quite often in the last few years. In this context, he will discuss random set models in modern architecture and mosaics in church windows.

This talk is a presentation of a series of beautiful images, with some explanation of the corresponding mathematical models, without using any formulas. The aim is to show the beauty of the models and to direct attention to the random patterns around us.

Born in Berlin, Dietrich Stoyan now lives in Saxony and did his PhD and habilitation at the TU Bergakademie Freiberg. In 1976, he became a lecturer at the Bergakademie, then professor of applied stochastics (1990-2006). He served as university president (1991-1997) and is a member of the Leopoldina and the Berlin-Brandenburg Academy of Sciences and Humanities. Stoyan's research focuses on stochastic geometry, spatial statistics and queueing theory.

www.math-berlin.de