



Berlin
Mathematical
School

BMS Friday Colloquium

Friday 24 May 2013 at 14:15

Tea & Cookies starting at 13:00

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

Anders Björner

(KTH Royal Institute of Technology)

Continuous Analogs of Discrete Structures

There are several analogies between discrete and continuous mathematics that influence our thinking and understanding. For a very basic example, take the relationship of finite sums to integrals, the underpinnings of which relate the Boolean lattice of subsets of a finite set with its continuous analog, the measurable subsets of the unit interval.

In this context, a special role is played by von Neumann's "continuous geometries" from 1936. These analogs of finite-dimensional vector spaces were discovered (or, created, if you wish) in connection with his work on operator algebras and the foundations of quantum physics.

A general setting for such analogs, suggested by matroid theory, will be discussed in this talk. This is based on work from the 1980's, in part jointly with L. Lovász, on continuous matroids, including continuous analogs to partitions and field extensions.

Anders Björner is a professor of mathematics at the KTH Royal Institute of Technology and his research interests include combinatorics, related parts of algebra, geometry, topology as well as computer science. Björner gained his PhD at Stockholm University in 1979 and in 1983 he was awarded the George Pólya Prize for his work on combinatorial theory. He has been a member of the Royal Swedish Academy of Sciences since 1999, is currently chairman of the board of Institut Mittag-Leffler, and member of the board of trustees of the Nobel Foundation.

