

Vorträge

Mittwoch, 2. Oktober 2013, ab 16:15 Uhr, Sky Lounge (12. Stock), OMP 1, 1090 Wien
Mathematisches Kolloquium

Prof. Dr. Hans-Jürgen Bandelt (Universität Hamburg): „A mathematical duality and its application in forensic genetics”

Abstract:

Isbell (1980) introduced isotropic (ternary) algebras and Mulder (1980) was the first to define quasi-median graphs (and algebras), which determine the same mathematical structure in the finite case. Ploščica (1992) then described a "natural" duality between these algebras and sets endowed with the discrete topology, with a single binary relation, a single unary relation, a constant and permutations (which together directly express gated decomposition of the algebras). There is a more parsimonious way to describe the algebra by considering some generating subset of the algebra, which dually gives rise to a data table of finite sequences over a finite alphabet. The binary relation of strong compatibility between positions of these sequences then reflects the crucial relational structure of the dual. In this light, data tables over the DNA alphabet $\{A, G, C, T, -\}$ can be viewed as the dual of a quasi-median algebra. A natural evolutionary process acting on a uniparental marker (mtDNA, or non-recombining part of the Y chromosome) produces a genealogical tree connecting DNA sequences, which would be retrieved as the dual of the corresponding data table if the mutations always hit different DNA positions. Normally, however, some amount of recurrent mutations somewhat blur the genealogical signal. The strong compatibility relation is then highly sensitive to parallelisms and reversals at DNA positions. This relation helps distinguishing artificial mutational patterns caused by experimental and documentation errors from natural evolutionary patterns, when one focusses on DNA positions with known low mutation rates. Consequently, the graphical display enables curators of databases to pinpoint likely errors and thus to quickly weed out flawed datasets. Exactly this is being done routinely in the case of the worldwide forensic mtDNA database EMPOP.

15:45 Uhr – 16:15 Uhr K & K

Dr. Damian Osajda, Dekan Univ.-Prof. Dr. Harald Rindler

Montag, 30. September 2013, ab 9:00 Uhr bis Freitag, 4. Oktober 2013, ab 9:00 Uhr
ESI, Erwin Schrödinger Lecture Hall, Boltzmanngasse 9/2, 1090 Wien

Workshop on “Descriptive Set Theory”

(Details siehe Attachment)

organized by

Sy-D. Friedman, M. Goldstern, A. Kechris, J. Kellner, W. H. Woodin

Montag, 30. September 2013, ab 14:00 Uhr, ESI, Erwin Schrödinger Lecture Hall,
Boltzmannngasse 9/2, 1090 Wien

ESI Seminar

Dr. Monica Guica (Pennsylvania University): “On black holes and star products”

Organized by: J. Schwermer

Mittwoch, 2. Oktober 2013, ab 18:00 Uhr, Seminarraum 9, 2. Stock

(Zeit und Seminarraum, Ausnahme!), OMP 1, 1090 Wien

Geometry and Analysis on Groups – Research Seminar

Martino Lupini (York University): “Sofic and hyperlinear groups and the logic for metric structures.”

Link: <http://www.mat.univie.ac.at/~dosaj/GGTWien/Seminar.html>

Donnerstag, 3. Oktober 2013, von 17:00 Uhr bis 18:30 Uhr, Seminarraum 11, 2 Stock,
OMP 1, 1090 Wien

Vortrag im Rahmen des Seminars Finanzmathematik

Miklós Rásonyi: „Superhedging under superlinear liquidity costs”