

Seminari de Geometria Algebraica 2010/2011 (UB-UPC)

Divendres 8 d'abril a les 15 h, aula 102 FME-UPC

<http://atlas.mat.ub.edu/sga>

Combinatorial configurations and numerical semigroups

Klara Stokes

Universitat Rovira i Virgili

A combinatorial configuration is a set of points and a set of lines together with a symmetric incidence relation, such that there are r lines through any point, k points on any line and through any pair of points there is at most one line or equivalently, any pair of lines meet in at most one point. Combinatorial configurations have been used for example to preserve the privacy of the user of a search engine and to construct LDPC codes.

Fixing r and k the parameters for which combinatorial configurations exist form a numerical semigroup. In particular, the existence of a conductor for a numerical semigroup implies that there is a number N such that there always exists a combinatorial configuration of size n for n greater than N , assuming that some necessary conditions for existence are satisfied. I will discuss some aspects of the numerical semigroup associated to the existence of combinatorial configurations.
