



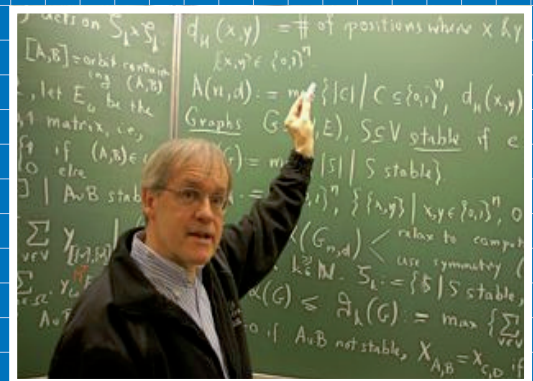
**Berlin  
Mathematical  
School**

## BMS Friday Colloquium

Friday, 23 April 2010, 2:00 pm

*Tea before the lecture starts at 1 pm*

BMS Loft, Urania  
An der Urania 17, 10787 Berlin



### Alexander Schrijver (CWI and University of Amsterdam):

#### "Bounding Stable Sets in Graphs and Codes"

Finding a maximum-size stable set in a graph is a hard problem. A special case is finding maximum-size error-correcting codes, where the graphs have even exponential size. Delsarte and Lovasz gave good upper bounds, using linear and semidefinite programming.

Alexander Schrijver extends these methods with tools from representation theory and  $C^*$ -algebra, yielding sharper code bounds. For instance, it gives  $A(20,8)=256$ , that is, the maximum number of 0,1 words of length 20 any two of which have Hamming distance at least 8, is equal to 256. In other words, the quadruply shortened Golay code is optimum.

In the talk he gives an introduction to the methods and results. Joint work with Dion Gijswijt and Hans Mittelmann.

