

# Computing the chromatic number of graphs

*Date* Tuesday, February 9

*Time* 3 pm

*Location* 303 Mudd

*Abstract:* It can be very difficult in practice to optimally color a graph. For example, a set of randomly-generated test instances introduced by David Johnson in 1989 remain unsolved, the smallest example having only 125 vertices. We discuss the use of linear-programming methods to compute safe lower bounds on the chromatic number. Our methods do not depend on the floating-point accuracy of linear-programming software. This talk is based on joint work with Stephan Held (University of Bonn). Computational results and computer codes are freely available at site:

<http://code.google.com/p/exactcolors/>