Seminari de Geometria Algebraica 2006/2007 (UB-UPC)
Divendres 25 de Maig a les 15hs a l'aula B4
http://atlas.mat.ub.es/sga

The edge ideals of chordal graphs

Adam VAN TUYL

Lakehead University, Canada

Given a simple (no loops or multiple edges) graph G, one can associate to G a quadratic squarefree monomial ideal $I(G)$ in the polynomial ring $R = k[x_1, ...x_n]$. It is then natural to ask how the properties of G are reflected in $I(G)$ and vice versa. In this talk I will discuss some of my recent projects on this question. In particular, I will talk about the graded Betti numbers of the edge ideal and the sequentially Cohen-Macaulayness of $R/I(G)$. I will highlight the case that G is a chordal (or triangulated) graph; in this situation the edge ideal has nice properties, e.g., the graded Betti numbers can be computed recursively. I will also discuss my recent work on developing a hypergraph analog of chordal graphs to study squarefree monomial ideals.
