

---

**CHRIS GODSIL**, University of Waterloo  
*Graphs, Polytopes, Quadrics*

Let  $X$  be a graph with adjacency matrix  $A$  and eigenvalue  $\theta$ . The projections of the standard basis vectors onto the  $\theta$ -eigenspace of  $A$  generate a convex polytope, and properties of this polytope relate in an interesting way to properties of  $X$ . We can use knowledge of the facets to derive the Erdős-Ko-Rado theorem. We can also use information about the real quadrics that contain the vertices of the polytope to constrain the structure of  $X$ . In my talk I will explain these connections.