

**Wednesday**  
**Nov 29, 2017**  
**EMS Building**  
**Room E408**  
**2:00pm**



**Richard Scott**

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## Cube Complexes and their Growth Series

A cube complex  $Y$  is a geometric object constructed by gluing together Euclidean cubes along their faces. If  $G$  is the fundamental group of  $Y$ , then there is an induced length function  $\ell$  from  $G$  to the positive integers defined by letting  $\ell(g)$  be the number of edges in a minimal edge-path representing the loop  $g$  in  $G$ . The corresponding growth series of  $G$ , is then defined to be the power series  $G(q) = \sum q^{\ell(g)}$ , where the sum is taken over all  $g$  in  $G$ .

In this talk, we will show how certain combinatorial conditions on the cube complex can impose surprising algebraic properties on  $G(q)$ .



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