1086-05-229 **Edward L Richmond*** (erichmond@math.ubc.ca), University of British Columbia, Department of Mathematics, 1984 Mathematics Rd, Vancouver, BC V6T 1Z2, Canada, and **William Slofstra**.
Coxeter groups, palindromic Poincaré polynomials and triangle group avoidance. Preliminary report.

Let W be a Coxeter group. For any w in W, let P_w denote the Poincaré polynomial of w (i.e. the generating function of the principle order ideal of w with respect to length). If W is the Weyl group of some Kac-Moody group G, then P_w is the usual Poincaré polynomial of the corresponding Schubert varitey X_w.

In this talk, I will discuss joint work with W. Slofstra on detecting when the sequence of coefficients of a Poincaré polynomial are the same read forwards and backwards (i.e. palindromic). The polynomial P_w satisfies this property precisely when the Schubert variety X_w is rationally smooth. It turns out that this property is easy to detect when the Coxeter group W avoids certain rank 3 parabolic subgroups (triangle groups). One consequence is that, for many Coxeter groups, the number of elements with palindromic Poincaré polynomials is finite. Explicit enumerations and descriptions of these elements are given in special cases. (Received August 09, 2012)