1116-05-111 **Alexander Diaz-Lopez** and **Pamela Estephania Harris*** (pamela.harris@usma.edu), 646 Swift Road, West Point, NY 10996, and **Erik Insko** and **Darleen Perez-Lavin**. *Peak Sets of Classical Coxeter Groups.*

We say a permutation $\pi = \pi_1\pi_2\cdots\pi_n$ in the symmetric group $\mathfrak{S}_n$ has a peak at index i if $\pi_{i-1} < \pi_i > \pi_{i+1}$ and we let $P(\pi) = \{i \in \{1, 2, \ldots, n\} | i \text{ is a peak of } \pi\}$. Given a set S of positive integers, we let $P(S; n)$ denote the subset of $\mathfrak{S}_n$ consisting of all permutations π, where $P(\pi) = S$. Billey, Burdzy, and Sagan proved $|P(S; n)| = p(n)2^{n-|S|-1}$, where $p(n)$ is a polynomial of degree $max(S) - 1$ and Castro-Velez *et al.* considered the Coxeter group of type B_n as the group of signed permutations on n letters and showed that $|P_B(S; n)| = p(n)2^{2n-|S|-1}$ where $p(n)$ is the same polynomial of degree $max(S) - 1$. In this talk, we embed the Coxeter groups of Lie type C_n and D_n into $\mathfrak{S}_{2n}$ and partition these groups into bundles of permutations $\pi_1\pi_2\cdots\pi_n|\pi_{n+1}\cdots\pi_{2n}$ such that $\pi_1\pi_2\cdots\pi_n$ has the same relative order as some permutation $\sigma_1\sigma_2\cdots\sigma_n \in \mathfrak{S}_n$. This allows us to count the number of permutations in types C_n and D_n with peak set S by reducing the enumeration to calculations in the symmetric group and sums across rows of Pascal's triangle. (Received July 28, 2015)