1023-08-1056 **Patricia R Cahn*** (patricia.cahn@gmail.com), **Juan Li** and **Jeremy Schwartz**.
Computational Efficiency in Weyl Groups. Preliminary report.

Computer packages for Weyl group computations typically do not represent group elements uniquely due to their use of generators and relations. A unique signed permutation representation for Weyl group elements in $W(A_n)$, $W(B_n)$, and $W(D_n)$ has already been developed. We present an extension of this notation to Weyl groups $W(G_2)$ and $W(F_4)$. We also present algorithms for computing properties of group elements such as length. A future goal is to implement this notation and its associated algorithms in Mathematica.

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