1049-05-99 **Karola Meszaros*** (karola@math.mit.edu). *Triangulation of root polytopes and reduced forms.*

A type A_{n-1} root polytope is the convex hull in $\mathbb{R}^n$ of the origin and some of the points $e_i - e_j$ for $1 \leq i < j \leq n$. We will discuss a connection between triangulations of root polytopes and reduced forms of a monomial in an algebra generated by n^2 variables x_{ij}, for $1 \leq i < j \leq n$. We show that the reduced form is unique, and corresponds to a shellable triangulation of the root polytope in which each simplex corresponds to a noncrossing alternating tree. We also show generalizations to other types. (Received February 25, 2009)