1086-05-2106   **Emma Polaski*** (`polaskiem1@gcc.edu`), **Eric Fairchild** and **Robin Mabe**. *Higher Order Rectification: Polytope Numbers and Cutting.* Preliminary report.

Polytope numbers are a non-negative number sequence constructed from the geometry of a polytope. r-Rectification is the process of cutting of a vertex to the center of each r-dimensional cell connected to the vertex. We extend previous results to show a formula for the polytope numbers of an r-rectified simplex, by realizing the geometric process of cutting in an alternating summation of smaller simplex numbers in the same dimension. It is important to note that this realization of the geometric process in the polytope number sequences does not hold for rectifying other regular polytopes. (Received September 24, 2012)