1107-52-121   **Egon Schulte*** (`schulte@neu.edu`), Northeastern University, Department of Mathematics, Boston, MA 02115. *Colorful Polytopes, Associahedra and Cyclohedra.*

Every n-edge colored n-regular graph G naturally gives rise to a simple abstract n-polytope P(G), called the colorful polytope of G, whose 1-skeleton is isomorphic to G. We describe colorful polytope versions of the associahedron and cyclohedron. Like their classical counterparts, the colorful associahedron and cyclohedron encode triangulations and flips, but now with the added feature that the diagonals of the triangulations are colored and adjacency of triangulations requires color preserving flips. The colorful associahedron and cyclohedron are derived as colorful polytopes from the edge colored graph whose vertices represent these triangulations and whose colors on edges represent the colors of flipped diagonals. Joint work with G.Araujo-Pardo, I.Hubard and D.Oliveros. (Received January 08, 2015)