1147-13-335 **Hidefumi Ohsugi*** (ohsugi@kwansei.ac.jp), Department of Mathematical Sciences, School of Science and Technology, Kwansei Gakuin University, 2-1 Gakuen, Sanda, Hyogo 669-1337, Japan, and **Akiyoshi Tsuchiya**. *Reflexive polytopes arising from bipartite graphs with γ-positivity associated to interior polynomials.*

In this talk, we introduce polytopes $\mathcal{B}_G$ arising from root systems B_n and finite graphs G, and study their combinatorial and algebraic properties. In particular, it is shown that $\mathcal{B}_G$ is a reflexive polytope with a regular unimodular triangulation if and only if G is bipartite. This implies that the h^*-polynomial of $\mathcal{B}_G$ is palindromic and unimodal when G is bipartite. Furthermore, we discuss stronger properties, the γ-positivity and the real-rootedness of the h^*-polynomials. In fact, if G is bipartite, then the h^*-polynomial of $\mathcal{B}_G$ is γ-positive and its γ-polynomial is given by an interior polynomial (a version of Tutte polynomial of a hypergraph). The h^*-polynomial is real-rooted if and only if the corresponding interior polynomial is real-rooted. From a counterexample of Neggers–Stanley conjecture, we give a bipartite graph G whose h^*-polynomial is not real-rooted but γ-positive, and coincides with the h-polynomial of a flag triangulation of a sphere. (Received January 20, 2019)