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Stephen Sturgeon* (stephen.sturgeon1@gmail.com). *Polar Self-Dual Polytopes and Simplicial Spheres*. Preliminary report.

Minimal cellular resolutions have been described for several families of ideals. Generally these families have been described by combinatorial conditions on the generating sets. In this talk we will explore how the duality of gorenstein rings can be used in relation with geometric duality to construct cellular resolutions. We will in particular construct a cellular resolution of the Bier Spheres defined by Murai. Lastly we will see how the geometric constructions used have potential to apply to a much larger category. (Received August 15, 2014)