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Stephen P Sturgeon* (stephen.sturgeon@uky.edu). *Cellular Resolutions of Stacked Polytopes*. Preliminary report.

A common object of interest in the study of ideals is the free resolution of quotient rings. For some monomial ideals we can encode all the information of the free resolution in a cell complex. In this talk we construct a class of polytopes with several desirable qualities (integer embedding, polar self-dual, easily described face structure) that support the minimal free resolution of Stanley-Reisner rings arising from stacked polytopes. This is an interesting case as it is non-linear and Gorenstein. In the construction we use algebraic techniques coupled with geometric interpretations to find the desired polytope. (Received November 09, 2012)