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13. Combinatorics

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Non-constructible triangulations of balls

In recent days shellability of simplicial complexes (and cell complexes) is extensively studied by many researchers of the area of combinatorics. Here we study a notion named constructibility, which is a notion weaker than shellability. In this talk we show an example of a non-constructible triangulation of a 3-ball, and present a way of testing constructibility under the condition that the given triangulation of a 3-ball has all of their vertices on the boundary.

References:

R. P. Stanley, Cohen-Macaulay rings and constructible polytopes, *Bull. Amer. Math. Soc.* **81** (1975), 133-135.

G. M. Ziegler, *Lectures on Polytopes,* Springer-Verlag (1995), Chapter 8.