

# Edges of polytopes

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Hi,

I am reading the book "Algebraic Statistics for Computational Biology" by Sturmfels and Pachter. They refer to the following result by Gritzmann and Sturmfels:

Let  $P_1, P_2, \dots, P_k$  be polytopes in  $\mathbb{R}^d$ , and let  $m$  denote the number of non-parallel edges of  $P_1, P_2, \dots, P_k$ . Then the number of vertices of the Minkowski sum  $P_1 + P_2 + \dots + P_k$  is at most  $\sum_{j=0}^{d-1} \binom{m-1}{j}$ .

My question is: What can non-parallel edges possibly mean? As an example, what are the non-parallel edges of a square with vertices  $(0,0), (0,1), (1,0), (1,1)$  and a triangle with vertices  $(0,0), (0,1), (1,0)$ ? I have no idea :-)

Thanks!

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