Computational Observations

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- It seems that for random choices of A, it becomes hard to find any valid vectors. Is this because the state-space gets too small? Does the simple quantum choice lead to the largest possible state spaces, modulo the choice of P?
- It's possible (!) that for a given choice of A, the state space doesn't even contain the columns of P itself! How can we formalize the restriction on A so that that the state-space contains the reference states themselves? A lot of the time you just get a triangle-like thing $n = 3, r = 3$ but maybe off-set.
- I mean, actually: can you get any convex body, let's say, up to a certain resolution, by an appropriate choice of A and P?
- Say, for $n = 3, r = 3$, as α approach 1, you recover the simplex. As α increases, the state space gets smaller, and also becomes more rounded, guitar-pick like. Reuleaux triangle? These state-spaces all seem self-dual. In the full-rank case, P must be equiangular. In any case, it looks just like a qplex!