From: (b) (6)

To: Perlner, Ray A. (Fed); Moody, Dustin (Fed); Apon, Daniel C. (Fed); Javier Alfonso Verbel Herrera

Subject: data

Date: Tuesday, December 3, 2019 7:57:04 PM

Hi, everyone,

I submitted a new draft with some data I collected. I noticed that the data for characteristic 2 looked like it did not use the enhancement from our 2017 paper. Instead of coding that up, I coded something that was a little hack using an old script I had made with magma.

It was pretty cool. I found the minrank solution which in general was a three dimensional space, and coded a new minrank problem from that Even though the rank is high, the number of variables is 3 in general, so it is very easy to solve algebraically with KS. So that way I don't have to remember how that enhancement worked. Hurrah!

Anyway, it is still pretty slow for some reason, but I checked the number of trial vectors needed and it matches much closer to the predicted values, so I updated the paper with these data.

I only did a **very very** small number of trials, though, to get the data quickly so I could put it before the server closes. It would definitely be better to see if we have code that does it the right way.

I think it is need that I can do a minrank in a minrank, though. I had never thought of that. Kind of makes the enhancement of the 2017 paper seem pointless now...

Cheers!