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The optimality of projections for quantum state exclusion

We will first motivate the problem of quantum state exclusion of pure states, through its connections with the PBR game and with compatibility conditions for quantum state assignments. Then, we will discuss our result regarding the optimality of projections for perfect state exclusion of 3 pure states in 3 dimensions (arXiv:1702.06449). We will describe our techniques to prove this result, which are based on arguments involving convexity, rank and symmetry properties. Finally, we will discuss possible avenues for extending our results.