Abstract

Quantum Solution to the Problem of 36 Officers of Euler

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We present analytical solution to the quantum analogue of the famous problem of 36 officers of Euler. The result gives positive answer to several related questions concerning existence of two quantum orthogonal Latin squares of size six, Absolutely Maximally Entangled state AME(4, 6) for four parties with six levels each, $2-$unitary matrix of size 36 with maximal entangling power, perfect tensor T_{ijkl} with four indices each running from 1 to 6 or pure nonadditive quantum error correction code $((4, 1, 3))_6$.

This is the joint work with Suhail Ahmad Rather, Adam Burchardt, Grzegorz Rajchel-Mieldzioć, Arul Lakshminarayan and Karol Życzkowski. Preprint is available online: `arXiv:2104.05122`.