

Excess of a matrix and generalized Bell inequalities

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Abstract

We recall the standard definition of excess of a Hadamard matrix and propose some generalizations of this notion. We study the bounds of excess for several classes of matrices: unitary (complex Hadamard), hermitian, circulant, etc. A connection between the excess and Bell inequalities (CHSH) is provided. We show a one-to-one relation between the calculation of classical value of a Bell inequality and generalized excess of a given matrix. Joint work with Dardo Goyeneche, Ondrej Turek, Daniel Alsina, Karol Życzkowski.

[1] Paper1

[2] Paper2