

Quantum Physics

Non-homogeneous Bell-type Inequalities for Two- and Three-qubit States

Mingjun Shi, Changliang Ren, Jiangfeng Du

(Submitted on 21 Jan 2009)

A systematic approach is presented to construct non-homogeneous two- and three-qubit Bell-type inequalities. When projector-like terms are subtracted from homogeneous two-qubit CHSH polynomial, non-homogeneous inequalities are attained and the maximal quantum mechanical violation asymptotically equals a constant with the subtracted terms becoming sufficiently large. In the case of three-qubit system, it is found that most significant three-qubit inequalities presented in literature can be recovered in our framework. We also discuss the behavior of such inequalities in the loophole-free Bell test and obtain corresponding thresholds of detection efficiency.

Subjects: **Quantum Physics (quant-ph)**Cite as: [arXiv:0901.3253v1](#) [quant-ph]

Submission history

From: Changliang Ren [[view email](#)]**[v1]** Wed, 21 Jan 2009 12:18:11 GMT (234kb)*[Which authors of this paper are endorsers?](#)*

Download:

- [PDF](#)
- [PostScript](#)
- [Other formats](#)

Current browse context:

quant-ph[< prev](#) | [next >](#)[new](#) | [recent](#) | [0901](#)

References & Citations

- [SLAC-SPIRES HEP](#)
([refers to](#) | [cited by](#))
- [CiteBase](#)

Bookmark (what is this?)

 [CiteULike logo](#) [Connotea logo](#) [BibSonomy logo](#) [Mendeley logo](#) [Facebook logo](#) [del.icio.us logo](#) [Digg logo](#) [Reddit logo](#)Link back to: [arXiv](#), [form interface](#), [contact](#).