

## Quantum Physics

# An Experimentally accessible geometric measure for entanglement in $N$ -qudit pure states

Ali Saif M. Hassan, Pramod S. Joag

*(Submitted on 16 Jan 2009)*

We present a multipartite entanglement measure for  $N$ -qudit pure states, using the norm of the correlation tensor which occurs in the Bloch representation of the state. We compute this measure for important class of  $N$ -qudit pure states, namely general GHZ states. We prove that this measure possesses almost all the properties expected of a good entanglement measure, including monotonicity. Finally, we extend this measure to  $N$ -qudit mixed states via convex roof construction and establish its various properties, including its monotonicity.

Comments: 22 pages, one figures

Subjects: **Quantum Physics (quant-ph)**

Journal reference: PHYSICAL REVIEW A 80, 042302 (2009)

Cite as: [arXiv:0901.2398v1](https://arxiv.org/abs/0901.2398v1) [quant-ph]

## Submission history

From: Ali Hassan student [[view email](#)]

[v1] Fri, 16 Jan 2009 05:38:25 GMT (300kb)

*[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](#)