

This is a review submitted to Mathematical Reviews/MathSciNet.

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Author: Ghatak, Ananya; Mandal, Bhabani Prasad

Title: Entangled quantum state discrimination using a pseudo-Hermitian system.

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Primary classification: 81Q12

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Review text:

In contrast to what is said in the abstract of this paper, the authors DO NOT “demonstrate how to discriminate two non-orthogonal ... quantum states”. Their message merely is that whenever a suitable “metric operator ... is used” to make the entangled system “fully consistent with quantum theory”, the states in question may be made orthogonal. Then [i.e., after the full specification of the quantum system: cf. my own compact review “Three-Hilbert-space formulation of Quantum Mechanics” in SYMMETRY, INTEGRABILITY and GEOMETRY: METHODS and APPLICATIONS (SIGMA), vol. 5 (2009), paper 001, arXiv: 0901.0700 for more details], one can discriminate between the two states in a single measurement of course. Incidentally, interested readers only have to regret that preprint [2] by Bender et al (offering, under the title “PT-symmetric quantum state discrimination”, a better written presentation of the very similar idea almost two years earlier) was only submitted, after perceivable delay and with two further coauthors added, to proceedings in Philosophical Transactions A which are still at press in 2013.