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Rotational Covariance and GHZ Contradictions for three or more particles of any dimension JAY LAWRENCE, University of Chicago and Dartmouth College — Greenberger-Horne-Zeilinger (GHZ) states are characterized by a special symmetry under independent uniaxial rotations of particles. Observables representing particular detector arrangements transform covariantly and exhibit a wealth of GHZ contradictions. Hidden variables cannot reproduce this covariance for any number of particles (N ? 3) of any spin S (or dimension d = 2S + 1). However, finding specific and experimentally verifiable contradictions covering all cases requires increasingly more complex arguments, utilizing more observables, for more difficult cases [1]. We illustrate a new method that utilizes explicit reference to hidden variable failure, which succeeds for the most difficult. The method is applied to the case of three particles of any prime dimension. 1. J. Lawrence, eprint arXiv:1308.3808 [quant/ph].

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