Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Tests of local realism and the coincidence-time problem[1] JAN-ÅKE LARSSON, Linköping University — This paper analyzes effects of time-dependence in the Bell inequality, and other tests of local realism. Generalized tests are derived for the case when coincidence and non-coincidence [and hence whether or not a pair, or triplet, contributes to the actual data] is controlled by timing that depends on the detector settings. Needless to say, these tests are violated by quantum mechanics and could be violated by experimental data provided that the loss of measurement data through failure of coincidence is small enough, but the quantitative bound is more restrictive in this case than in the previously analyzed "efficiency loophole."

[1]Work is financially supported by the Swedish Science Council

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Date submitted: 15 Dec 2006 Electronic form version 1.4