

# Speed dependent polarization correlations in QED and entanglement

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**Abstract.** Exact computations of polarizations correlations probabilities are carried out in QED, to the leading order, for initially *polarized* as well as *unpolarized* particles. Quite generally they are found to be *speed dependent* and are in clear violation of Bell's inequality of Local Hidden Variables (LHV) theories. This dynamical analysis shows how speed dependent entangled states are generated. These computations, based on QED are expected to lead to new experiments on polarization correlations monitoring speed in the light of Bell's theorem. The paper provides a full QED treatment of the dynamics of entanglement