

RELATIVISTIC-GEOMETRIC ENTANGLEMENT: SYMMETRY GROUPS OF SYSTEMS OF ENTANGLED PARTICLES

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Abstract. It is known that entangled particles involve Lorentz symmetry violation. Hence, we pay attention to Lorentz transformations of signature (m, n) for all positive integers m and n . We show that these form the symmetry groups by which systems of m entangled n -dimensional particles can be understood, just as the common Lorentz group of signature $(1, 3)$ forms the symmetry group by which Einstein’s special theory of relativity is understood. A novel, unified parametric realization of the Lorentz transformations of any signature (m, n) shakes down the underlying matrix algebra into elegant and transparent results.

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