

Abstract Submitted
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Explorations in conformal symmetry for quantum relativity LUCAS EARL, JEAN-FRANCOIS VAN HUELE, Brigham Young University — The conformal group is a supergroup of the Poincare group that leaves Maxwell's equations invariant. Conformal symmetry has many applications in physics. Can conformal symmetry be applied to bring together special relativity, which treats space and time on the same level, and quantum theory, which does not? Quantum relativity, as developed by Jaekel and Reynaud [1], introduces operators X^μ for space-time localization from the generators of the conformal group in an Einsteinian operational way. We explore how this approach can help describe elementary space-time processes like pair creation and pair annihilation. [1] M.T. Jaekel and S. Reynaud, *Found.Phys.***28**, 439-456 (1998).

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