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An Introduction to Euclidean Relativistic Quantum Mechanics[1]

PHILIP KOPP, WAYNE POLYZOU, University of Iowa — In nuclear physics, sub-nucleonic degrees of freedom are expected to become relevant at the few-Gev scale. Models at this scale require a relativistic treatment. The Euclidean formulation of relativistic quantum mechanics offers an efficient framework to model systems of a finite number of degrees of freedom at this scale. At the same time, the input Euclidean Green's functions are closely related to Green functions of Euclidean field theory. We discuss the formulation of the relativistic theory. We also develop scattering theory in this formalism. A solvable model is utilized to show the usefulness of this method.

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