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Quantum evolution equations of Klein-Gordon type

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(the diploma thesis project)

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Introduction

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In paper [1], in 1992, it has been established that

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(1) a set of non-Hermitian operators (of which the KG Hamiltonian is a prominent special case) can constitute a consistent quantum mechanical system;

(2) this involves, first of all, the construction of a metric Θ (if it exists);

(3) this metric is, in general, non-unique.

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Several parts of this text, with their emphasis on phenomenology and applications as well as on a comparatively rigorous mathematics, can be recommended as an introductory reading.

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In the easy-to-read review paper [2] (dated 2010), interested readers may find a self-contained explanation of the ten years old state of the art. Section 9.2 devoted to KG-like equations is of particular interest in the present context.

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The major part of the basic, not always fully developed ideas behind the present project of the diploma thesis has its origin in the recent text of paper [3].

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References

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