NON-UNITARY QUANTUM THEORY (MATHEMATICAL FOUNDATIONS). 1

S. S. Sannikov-Proskuryakov

National Scientific Center
'Kharkiv Institute of Physics and Technology"
(*1, Academichna Str., Kharkiv 61108, Ukraine*)

We present the mathematical apparatus of a new quantum scheme using a dual pair of reflexive topological vector spaces connected by any non-Hermitian form. Non-Fock (non-selfadjoint) representations of Heisenberg algebras and non-unitary representations, induced by them, of their automorphism groups underlie the theory, which gives a unique joint description of quantum objects and physical vacuum (ether).