# MATHEMATICAL CONSTRUCTION FOR OPERATOR OF INDIVIDUAL STATE OF QUANTUM PARTICLE

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In works [1,2] we was show that concordance of correlated particles formalism and relative theory is possible by introducing of operator of individual state for each particle in quantum ensemble. That operator maps each Hermitian operator of measurement on Hilbert space of quantum states to exactly one its eigenvector. The existing of those operators is corollary of Set Theory of Zermelo-Fraenkel. If we introduce for each particle any linear ordering on the space of all generalized functions at Hilbert space, then each measurement operator may be mapped to own eigenvector with minimal ordinal number. In that case the individual state is described by linear ordering. But that approach has not a construct description. We propose other method. Let any infinite countable sequence of Hilbert vectors is associated for each quantum particle, and that sequence is everywhere dense. Then the particle maps any measurement operator to first vector of sequence which has unique nearest eigenvector of that operator. And that eigenvector will choose for measurement as pure state. The operator eigenbasis is orthonormal, and therefore such vectors exist in sequence. If operator has continuous specter then it is possible that such vector do not exist. In that case it is necessary to limit exactness of measurement by chose of countable epsilon-net on the set of eigenvalues. Afterwards in is possible make chose of one generalized eigenvector which correspond that epsilon-net. It is necessary mark that in such ideology the measurement is definite besides Hermit operator still by the prescribed dispersion epsilon. By support of Russian Fond of Basis Research, grant 13-01-00190a, , 11-06-00155a and Russian Humanitarian Science Fond, grant 11-03-00035a.

**Reference**

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