Contribution ID: 21

Causal symplectic geodesic structures in terms of bilinear functionals for Haag- Araki theory

In this paper, a proof of the theorem on the global hyperbolicity of space-time M on the sphere S^4 is proposed based on the topology of open light cones; the work uses the so-called concrete approach to the construction of the Haag-Araki axiomatics.

The properties of causal geodesic structures on the paracompact complement of space-time are investigated.1. A description of quasi-equivalent sectors has been created within the framework of super selection rules\\ 2. It is proven that each layer on a star-shaped surface is a projective limit for a tubular region in axiomatic field theory on a factor space\\

3. It is proved that the temporal ordering operator of the causal geodesic structure in the symplectic case

- 1. The advantages from the point of view of physical motivation for choosing the criterion of extended isotonia are indicated \\
- 2. A superstructure on the Bowen-Waters ultrametrics has been introduced in relation to axylmatic quantum field theory.
- 3. A new proof of the generalized Cook's criterion for ω_o states of the system has been found, based on the SEM (condition for positive energy on the symplectic layer).
- 4. It is shown that the Markovian time ordering operator $T^*_{\omega\lambda}$ has a closed spectrum The author has proven the following theorem Let there be a pseudo-Riemannian metric E with signature (+, -, +-) in class C^p on which there is an isomorphism defining an almost complex structure (E, σ) with gauge function σ , which defines a family of symplectic forms of the form $d\lambda^n$. This theorem can be reformulated like this:\par\textit{A symplectic structure based on the 1-form $d\sigma$ in the class C^p has a contractible fiber . For this purpose, an auxiliary lemma was proved. $\langle \cdot \rangle$ textit{Lemma 1. \exists at least 1 vector $v^a_b \perp TM$ non-orthogonal to the timelike surface } In order to find an object suitable for proving Lemma 1, it is necessary to prove the following theorem \begin{theorem}{l} heorem {} The paracompact complement of spacetime \hat{M} is a non-extensible globally hyperbolically complete spacetime

Primary author: GUDKOV, Evgeniy Presenter: GUDKOV, Evgeniy