CONSTRUCTION OF STATIONARY STATISTICAL STRUCTURES

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One the interesting problems are the description of Statistical structures. [1-3]
Here we recall some definitions

Definition 1. A statistical structure $\{E, S, \mu_i, i \in A\}$ is said to be orthogonal, if probability measures $\{\mu_i, i \in A\}$ are pair wise orthogonal.

Definition 2. Let there be given two statistical structures $M = \{E, S, \mu_i, i \in A\}$ and $N = (E, S, \nu_\alpha, \alpha \in C)$. We say that M is subjected to N, if for every $i \in A$ we can indicate the sequence $\{\alpha_k\}_{k \in N}$, $\alpha_k \in C$ and $\rho_k \geq 0$, $\sum_{k=1}^{\infty} \rho_k < \infty$ such that the measure μ_i is absolutely continuous to the measure $\sum_{k=1}^{\infty} \rho_k \nu_{\alpha_k}$.

Definition 3. A statistical structure none of whose measures from the above-mentioned family is a mixture of the rest ones is called pure.

Definition 4. We can say that a statistical structure $N = (E, S, \nu_\alpha, \alpha \in C)$ is weakly subjected to a statistical structure $M = \{E, S, \mu_i, i \in A\}$ if every measure ν_α is a mixture of measures $\{\mu_i, i \in A\}$. We prove the following theorems.

Theorem 1. Any stationary statistical structures is subjected to on orthogonal statistical structure or is subjected $\{E, S, \mu\}$.

Theorem 2. A stationary Gaussian orthogonal statistical structure is subjected to the sum $N_1 \cup N_2 \cup N_3$ of statistical structure, where N_1 is a pure statistical structure, N_2 is subjected to N_1, and N_3 is statistical structure, fully irreducible.

References

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