THE CONSISTENT CRITERIA FOR CHECKING HYPOTHESES IN HILBERT SPACE OF MEASURES

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Let $\mathcal{H}$ be set of hypotheses and $\mathcal{B}(\mathcal{H})$ is σ–algebra of all finite subsets $\mathcal{H}$– იდან. The family of probability measures $\{\mu_H, H \in \mathcal{H}\}$ will be said to admit a consistent criterion of hypotheses if there exists even though one measurable map $\delta:(E,S)\to(\mathcal{H},\mathcal{B}(\mathcal{H}))$, such $\mu_H(x:\delta(x)=H)=1$, $\forall H \in \mathcal{H}$. The family of probability measures $\{\mu_H, H \in \mathcal{H}\}$ will be said to admit unbiased criterion of any parametric function if for any real bounded measurable function $g(H)$ on $(\mathcal{H},\mathcal{B}(\mathcal{H}))$ exists even though one real bounded measurable function $f(x)$ on (E,S), such that $\int_E f(x)\mu_H(dx) = g(H)$. Let M^δ be linear real space of all alternating finite measures on S. Linear subset $M_H \subset M^\delta$ is called a Hilbert space of measures if: 1. One can introduce on M_H a scalar product $\langle \mu,\nu \rangle$, $\mu,\nu \in M_H$ such that M_H is Hilbert space and for every mutually singular measures we have $\langle \mu,\nu \rangle = 0$; 2. if $\nu \in M_H$ and $|f|=1$, then $\nu_f(A)=\int_A f(x)\nu(dx) \in M_H$, where $f(x)$ is S–measurable real function and $\langle \nu_f,\nu_f \rangle = \langle \nu,\nu \rangle$.

Theorem. Let M_H be a Hilbert space of measures, then in there exist a family of pair wise orthogonal probability measures $\{\mu_H, H \in \mathcal{H}\}$ such that $M_H = \bigoplus_{H\in\mathcal{H}} M_H(\mu_H)$ where $M_H(\mu_H)$ is Hilbert space of elements ν of the form: $\nu(B)=\int_B f(x)\mu_H(dx)$, $\int_E |f(x)|^2 \mu_H(dx) < \infty$.