

Hermitian measures in W^* -algebras in Hilbert spaces with conjugation

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Abstract

Let \mathcal{M} be a real semifinite W^* -algebra of J -real operators containing no finite central summand in a complex Hilbert space H with conjugation J . Denote by \mathcal{P} the quantum logic of all J -orthogonal projections in the von Neumann algebra $\mathcal{N} = \mathcal{M} + i\text{script } \mathcal{N}$. Let $\mu: \mathcal{P} \rightarrow \mathbb{R}$ be a Hermitian measure. It is shown that there exists a unique J -self-adjoint ultraweakly continuous linear functional ψ on \mathcal{N} such that $\mu(p) = \Re\psi(p)$, $\forall p \in \mathcal{P}$.
