THE CANONICAL DUAL OF A DISINTEGRATION MAP

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Abstract

Let $V : \mathcal{H}_\tau^\infty \to \mathcal{K}_\tau^\infty$ be the restriction of the Corwin-Greenleaf isometry on $\mathcal{H}_\tau^\infty$ the Fréchet dense subspace of C^∞ vectors of the Hilbert space $\mathcal{H}_\tau$ of an induced unitary representation τ of a nilpotent Lie group ($\mathcal{K}_\tau^\infty$ being the image of V in the disintegration of $\mathcal{H}_\tau^\infty$). It is constructed the canonical dual V' between the space of distribution vectors $\mathcal{H}_\tau^{-\infty}$ and its image $\mathcal{K}_\tau^{-\infty}$ in the disintegration of $\mathcal{H}_\tau^{-\infty}$. The spaces $\mathcal{H}_\tau^{-\infty}$ and $\mathcal{K}_\tau^{-\infty}$ are also endowed with topologies in such a way that V' is an isometry.