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Section:

8. Analysis

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Assiamoua, V. S. Kofi, Université du Bénin, Lomé, Togo

A product of sesquilinear mappings on Hilbert spaces

Let G be a compact group, Σ its dual object, H_σ the representation Hilbert space of dimension n_σ of σ s elements, $\sigma \in \Sigma$ and A a complex Banach algebra. In (*), we proved that for every $L_1(G, A)$ - multiplier T, there exists a family $(\Theta_\sigma)_{\sigma\in\Sigma}$ of bounded sesquilinear mappings $\Theta_\sigma : H_\sigma \times H_\sigma \to A$ such that $(F(Tf))_\sigma(\xi, \eta) = \Theta_\sigma X(Ff)_\sigma(\xi, \eta)$ where F is the Fourier transform with the product $\times$ defined by : $\Theta_\sigma X(Ff)_\sigma(\xi, \eta) = \int_G \Theta_\sigma(\bar{U}_\sigma(t)\zeta, \eta)dt,\ (\zeta, \eta) \in H_\sigma \times H_\sigma,\ U_\sigma \in \sigma.$

In this communication, and for further works, we extend the product $\times$ to all ordered pairs of sesquilinear mapping using their matrices $(a^\sigma_{tf}),\ a^\sigma_{tf} = \Theta_\sigma(\zeta_j\zeta_i)$ for an orthonormal basis of $(\zeta_1, \ldots, \zeta_{\eta\sigma})$ of H_σ.

Reference: V. S. K. Assiamoua, $L_1(G, A)$ - multipliers, Acta Sci. Math. 53 (1989), 309-318. (*)