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THE TRIPLE DIFFERENCE OPERATOR OF SPECTRUM OF QUANTUM

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Abstract. The generalization of triple difference operator Δ_{vq}^3 introducing its quantum analog Δ_q^3. The operator Δ^3 represent the three dimensional infinite matrix. In this artcle, we construct its matrix $\Pi^3(\Delta_q^3)$ and $\wedge^3(\Delta_q^3)$ in the spaces Π and $\wedge$ of entire and analytic sequences, respectively. Also we establish that the domains $\Pi^3(\Delta_q^3)$ and $\wedge^3(\Delta_q^3)$ are Banach metric spaces which are linearly isomorphic to Π^3 and $\wedge^3$ respectively. Additionally, we determine $\alpha-, \beta-$ and $\gamma-$ duals and show that the spectrum is the continuous spectrum of the operator $(\Delta_q^3 : \Pi^3)$.

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