FURTHER RESULTS ON GENERALIZED BOTT–DUFFIN INVERSES

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Abstract. Let $A$ be a bounded linear operator, $P_{\mathcal{M}}$ be an orthogonal projection with range $\mathcal{M}$ and $P_{\mathcal{M},\mathcal{N}}$ be an idempotent with range $\mathcal{M}$ and kernel $\mathcal{N}$. This paper presents some novel relations between Bott-Duffin inverse $A^+_M = P_{\mathcal{M}}(AP_{\mathcal{M}} + P_{\mathcal{M}}^\perp)^+$ and generalized Bott-Duffin inverse $A^+_{M,\mathcal{N}} = P_{\mathcal{M},\mathcal{N}}(AP_{\mathcal{M},\mathcal{N}} + P_{\mathcal{N},\mathcal{M}})^+$. Furthermore, the representations for the Bott-Duffin inverse and generalized Bott-Duffin inverse are presented.


Keywords and phrases: Generalized Bott-Duffin inverse, idempotent, orthogonal projection.

REFERENCES


