BROWDER–WEYL THEOREMS FOR POLAROID OPERATORS SATISFYING AN ORTHOGONALITY PROPERTY

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A Banach space operator T, $T \in B(X)$, satisfies property $\mathcal{O}$, if $(T-\alpha)^{-1}(0)$ and $(T-\beta)^{-1}(0)$ are mutually orthogonal (in the sense of Garret Birkhoff) for all non-zero $\alpha, \beta \in \sigma_p(T)$, and $(T-\alpha)^{-1}(0) \perp T^{-1}(0)$ for all non-zero $\alpha \in \sigma_p(T)$. For operators $T \in \mathcal{O}$, both T and T^* satisfy a-Browder's theorem. If also every part of T is polaroid, $T \in \mathcal{HP}$, then $f(T)$ and $f(T^*)$ satisfy Weyl's theorem for functions f which are analytic in a neighbourhood of $\sigma(T)$. For algebraically-$\mathcal{O} \cap \mathcal{HP}$ operators T, both T and T^* satisfy Weyl's theorem. Furthermore, if: (i) T is of *stable index* at points λ such that $T-\lambda$ is Fredholm, then $f(T)$ and $f(T^*)$ satisfy Weyl's theorem; (ii) T (resp., T^*) has SVEP at points in the Weyl spectrum of T, then $f(T^*)$ (resp., $f(T)$) satisfies a-Weyl's theorem.