1154-46-1786   **Lara Ismert*** (`ismertl@erau.edu`). *Analytic Vectors of a Weakly-Defined Derivation.*

In 2015, E. Christensen provided a much needed formalism to a derivation δ_D on $\mathcal{B}(\mathcal{H})$ implemented by commutation with an unbounded self-adjoint operator D. Specifically, the domain of such a derivation is ambiguous without further conditions on the domains of the resulting commutators $[iD, x]$ where x belongs to $\mathcal{B}(\mathcal{H})$. Restricting the domain of δ_D to the subalgebra of bounded operators x which make $[iD, x]$ bounded on the domain of D, Christensen shows that the domain of δ_D is weak operator topology (WOT) dense in $\mathcal{B}(\mathcal{H})$. In a subsequent paper, Christensen studies higher powers of δ_D and their respective domains, but does not provide a density statement for these (strictly) smaller subalgebras of $\mathcal{B}(\mathcal{H})$. We show that all domains of higher powers of δ_D are WOT-dense in $\mathcal{B}(\mathcal{H})$, and in fact, the analytic vectors for δ_D are WOT-dense in $\mathcal{B}(\mathcal{H})$. (Received September 16, 2019)

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