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On generalized Ambrose algebras

We consider *(strongly) H*-**A**-algebras* employing ***A**-hermitian inner products*, in place of numerical ones, generalizing the classical notion of W. Ambrose (1945). In many cases, ***A*** is a unital Hausdorff locally *C**-algebra, which under the canonical ***A***-inner product, becomes a strongly *H*-**A***-algebra. Positiveness of the ***A***-inner product is defined either by positive elements in a *-algebra or by spectrally positive elements. We further consider positive-definite ***A***-hermitian inner products that define ***A***-norms, making projective finitely generated ***A***-algebras into locally *m*-convex ones. Under appropriate conditions, the class of *H*-**A***-algebras is closed for cartesian products and projective limits, while the cartesian product of unital Hausdorff locally *C**-algebras is a strongly *H*-**A***-algebra. Further examples of (strongly) *H*-**A***-algebras are also supplied.

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