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Krull nature of locally C^* -algebras.*

ABSTRACT. Any complete locally m -convex algebra, whose normed factors in its Arens-Michael decomposition are Krull algebras is also Krull. In particular, any locally C^* -algebra is Krull. Considering perfect projective systems, we give another proof of the fact that any Fréchet locally C^* -algebra is Krull. Furthermore, a unital proper complete locally m -convex H^* -algebra with continuous involution is a locally C^* -algebra and hence Krull. The class of Krull (topological) algebras is closed with respect to cartesian products, topological algebra isomorphic images, and perfect projective limits.