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8. Analysis

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Structure of locally pseudoconvex algebas

A locally pseudoconvex algebra is a (not necessarily associative) topological algebra over $\mathbb{R}$ or $\mathbb{C}$ which has a base of balanced pseudoconvex neighborhoods of zero. Descriptions of those locally pseudoconvex algebras which are representable both in the form of an inductive limit of metrizable locally pseudoconvex algebras, of locally pseudoconvex Fréchet algebas or of k-Banach algebras with $k \in (0,1]$ and in the form of a projective limit of locally bounded Fréchet algebras are given. It is shown that every maximal ideal in a commutative, associative, complex, unital locally m-pseudoconvex Fréchet algebra A (with positive lower bound of its powers of homogeneity) is closed if and only if A is a Q-algebra.