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Approximately multiplicative functionals. (English) Zbl 0625.46059
J. Lond. Math. Soc., II. Ser. 34, 489-510 (1986).

Let \mathfrak{A} be a commutative Banach algebra with dual \mathfrak{A}^* . For $\phi \in \mathfrak{A}^*$, define $\check{\phi}(a,b) = \phi(ab) - \phi(a)\phi(b)$, and call ϕ δ -multiplicative iff $\|\check{\phi}\| \leq \delta$. \mathfrak{A} is an algebra in which approximately multiplicative functionals are near multiplicative (AMNM) if for each $\epsilon > 0$, there is $\delta > 0$ such that $\inf\{\|\phi - \psi\| : \psi \text{ is a character}\} < \epsilon$ whenever ϕ in \mathfrak{A}^* is δ -multiplicative. The author studies these entities and shows that AMNM algebras include the well-known examples (finite dimensional, $C_0(X)$, $L^1(G)$, $\ell^1(\mathbb{Z})$, disc algebra), but not all. A result of Gleason about multiplicativeness of functions with range contained in the spectrum is studied in a more general context.

Reviewer: [E.J.Barbeau](#)

MSC:

[46J05](#) General theory of commutative topological algebras
[46J40](#) Structure and classification of commutative topological algebras

Cited in **3** Reviews
Cited in **36** Documents

Keywords:

[an algebra in which approximately multiplicative functionals are near multiplicative; AMNM algebras](#)

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