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## A Note on Commutative Banach Algebras

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**Abstract:** Let  $\mathcal{A}$  be a unital Banach algebra over  $\mathbb{C}$  with norm  $\|\cdot\|$ . In this note, several characterizations of commutativity of  $\mathcal{A}$  are given. For instance, it is shown that  $\mathcal{A}$  is commutative if

$$\|AB\| = \|BA\|$$

for all  $A, B \in \mathcal{A}$ , or if the spectral radius on  $\mathcal{A}$  is a norm.



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