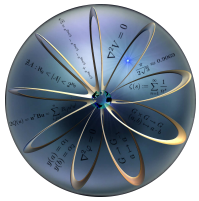

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boundedness in a topological vector space generalizes boundedness in a normed space

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Boundedness in a topological vector space is a generalization of boundedness in a normed space.

Suppose $(V, \|\cdot\|)$ is a normed vector space over $\mathbb{C}$, and suppose B is bounded in the sense of the parent entry. Then for the unit ball

$$B_1(0) = \{v \in V : \|v\| < 1\}$$

there exists some $\lambda \in \mathbb{C}$ such that $B \subseteq \lambda B_1(0)$. Using `http://planetmath.org/ScalingOfTheOper` result, it follows that

$$B \subseteq B_{|\lambda|}(0).$$