LARGE VECTOR SPACES OF BOUNDED SEQUENCES

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It has been recently proved in [2] that the set S of bounded non-convergent real sequences contains, except for zero, a dense vector space V with dimension continuum. We partition S into three sets $\{S_1, S_2, S_3\}$ and show that each of them has the same property. Then, we study the same question for V closed (in place of dense) and conclude with several open questions.

References

[1] P. Leonetti, T. Russo and J. Somaglia, *On dense lineability and spaceability in ℓ_∞*, in preparation.
[2] S. Papathanasiou, *Dense lineability and algebrability of $\ell_\infty \setminus c$*, Proc. Amer. Math. Soc. **150** (2022), 991–996.

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