Lech Drewnowski
True preimages of compact or separable sets for functional analysts

Abstract: We discuss various results on the existence of 'true' preimages under continuous open maps between F-spaces, F-lattices and some other spaces. The aim of the paper is to provide accessible proofs of this sort of results for functional-analysts.

References

[1] Aliprantis C., Burkinshaw O., *Locally Solid Riesz Spaces with Applications to Economics*, Mathematical Surveys and Monographs, 105, American Mathematical Society, Providence, 2003.

[2] Bessaga C., Pełczyński A., *Selected Topics in Infinite-Dimensional Topology*, Monografie Matematyczne, 58, PWN—Polish Scientific Publishers, Warsaw, 1975.

[3] Bourbaki N., *Éléments de mathématique. I: Les structures fondamentales de l'analyse. Fascicule VIII. Livre III: Topologie générale. Chapitre 9: Utilisation des nombres réels en topologie générale*, Deuxième édition revue et augmentée, Actualités Scientifiques et Industrielles, 1045, Hermann, Paris, 1958 (French).

[4] Diestel J., *Sequences and Series in Banach Spaces*, Graduate Texts in Mathematics, 92, Springer, New York, 1984.

[5] Drewnowski L., Wnuk W., *On finitely generated vector sublattices*, Studia Math. **245** (2019), no. 2, 129–167.

[6] Engelking R., *General Topology*, Biblioteka Matematyczna, Tom 47, Państwowe Wydawnictwo Naukowe, Warsaw, 1975 (Polish).

[7] Jarchow H., *Locally Convex Spaces*, Mathematische Leitfäden, B. G. Teubner, Stuttgart, 1981.

[8] Köthe G., *Topological Vector Spaces. I*, Die Grundlehren der mathematischen Wissenschaften, 159, Springer, New York, 1969.

[9] Michael E., *A theorem on semi-continuous set-valued functions*, Duke Math. J. **26** (1959), 647–651.

[10] Michael E., $\aleph_0$-*spaces*, J. Math. Mech. **15** (1966), 983–1002.

[11] Michael E., G_δ *sections and compact-covering maps*, Duke Math. J. **36** (1969), 125–127.

[12] Michael E., K. Nagami, *Compact-covering images of metric spaces*, Proc. Amer. Math. Soc. **37** (1973), 260–266.

[13] Nagami K., *Ranges which enable open maps to be compact-covering*, General Topology and Appl. **3** (1973), 355–367.

[14] Schaefer H. H., *Banach Lattices and Positive Operators*, Die Grundlehren der mathematischen Wissenschaften, 215, Springer, New York, 1974.