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Pseudouniform topologies on $C(X)$ given by ideals

Comment.Math.Univ.Carolin. 54,4 (2013) 557–577.

Abstract: Given a Tychonoff space X , a base α for an ideal on X is called *pseudouniform* if any sequence of real-valued continuous functions which converges in the topology of uniform convergence on α converges uniformly to the same limit. This paper focuses on pseudouniform bases for ideals with particular emphasis on the ideal of compact subsets and the ideal of all countable subsets of the ground space.

Keywords: function space; topology of uniform convergence; ideal; uniformity; Lindelöf property; pseudouniform ideal; almost pseudo- ω -bounded

AMS Subject Classification: 54A10, 54A20, 54A25, 54C35, 54D20, 54E15

REFERENCES

- [1] Arkhangel'skii A.V., *Topological Function Spaces*, Mathematics and its Applications, 78, Kluwer Academic Publishers, Dordrecht, 1992 (translated from the Russian).
- [2] Engelking R., *General Topology*, second edition, Sigma Series in Pure Mathematics, 6, Heldermann Verlag, Berlin, 1989; translated from the Polish by the author; MR **91c:54001**.
- [3] Gul'ko S.P., *On properties of subsets of Σ -products*, Soviet Math. Dokl. **18** (1977), 1438–1442.
- [4] Isiwata T., *On convergences of sequences of continuous functions*, Proc. Japan Acad. **37** (1961), no. 1, 4–9.
- [5] Jech T., *Set Theory*, The Third Millenium Edition, revised and expanded, Springer Monographs in Mathematics, 3rd rev. ed. Corr. 4th printing, Springer, Berlin, 2003.
- [6] Kundu S., McCoy R.A., *Topologies between compact and uniform convergence on function spaces*, Internat. J. Math. Math. Sci. **16** (1993), no. 1, 101–109.
- [7] Kunen K., *Set Theory. An Introduction to Independence Proofs*, Studies in Logic and the Foundations of Mathematics, 102, North-Holland Publishing Co., Amsterdam, 1980.
- [8] McCoy R.A., Ntantu I., *Topological properties of spaces of continuous functions*, Lecture Notes in Mathematics, 1315, Springer, Berlin, 1988.
- [9] Shakhmatov D.B., *A pseudocompact Tychonoff space all countable subsets of which are closed and C^* -embedded*, Topology Appl. **22** (1986), no. 2, 139–144.
- [10] Todorčević S., *Trees and linearly ordered sets*, Handbook of Set-Theoretic Topology, (K. Kunen and J.E. Vaughan, eds.), North-Holland, Amsterdam, 1984, pp. 235–293.
- [11] Turzanski M., *On generalizations of dyadic spaces*, in Frolík Z. (ed.), Proceedings of the 17th Winter School on Abstract Analysis. Charles University, Praha, 1989, pp. 153–159.
- [12] Vaughan J.E., *Countably compact and sequentially compact spaces*, Handbook of Set-Theoretic Topology, (K. Kunen and J.E. Vaughan, eds.), North-Holland, Amsterdam, 1984, pp. 569–602.