

## A NOTE ON KUHLMANN'S FIXED POINT THEOREMS

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**Abstract.** We show here how recently proven fixed point theorems by Kuhlmann and Kuhlmann can be derived from classical fixed point theorems from order theory.

**Key Words and Phrases:** fixed point theory, order theory.

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### REFERENCES

- [1] N. Bourbaki, *Sur le théorème de Zorn*, Arch. Math., **2**(1949), 434-437.
- [2] P.M. Cohn, *Universal Algebra*, Harper and Row, New York, 1965.
- [3] B. Knaster, *Un théorème sur les fonctions d'ensembles*, Ann. Soc. Polon. Math., **6**(1928), 133-134.
- [4] F.-V. Kuhlmann, K. Kuhlmann, *A common generalization of metric and ultrametric fixed point theorems*, Forum Math. 27 (2015), 303-327.
- [5] G. Markovsky, *Chain-complete posets and directed sets with applications*, Algebra Univ., **6**(1976), 53-68.
- [6] A. Tarski, *A lattice-theoretical fixpoint theorem and its applications*, Pacific J. Math., **5**(1955), 285-309.
- [7] M. Tasković, *On an equivalent of the axiom of choice and its applications*, Math. Japon., **31**(1986), 979-991.
- [8] E. Witt, *Beweisstudien zum Satz von M. Zorn*, Math. Nachr., **4**(1951), 434-438.

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