1084-18-124 **Sergejs Solovjovs*** (solovjovs@math.muni.cz), Department of Mathematics and Statistics, Faculty of Science, Masaryk University, Kotlarska 2, 611 37 Brno, Czech Rep. *Tower extension of topological categories.*

Given a topological construct $\mathbf{C}$ and a completely distributive lattice L, D. Zhang presented in 2000 a procedure of obtaining a new topological construct $\mathbf{C}(L)$, called the *tower extension of* $\mathbf{C}$ *w.r.t.* L, which provided a common setting for various existing topological machineries (e.g., the construction of the category of *approach spaces* of R. Lowen). Being implicitly a kind of a fuzzification of topological constructs, tower extension of D. Zhang fails to be well related to fuzzy topology. To remove the deficiency, we present its "partial" dualization called *tower extension of topological categories*, which, firstly, is applicable to (almost) every topological category; secondly, is variable-basis, namely, can rely on a whole category of lattice-theoretic structures in the sense of S. E. Rodabaugh; and, thirdly, for suitable categories $\mathbf{C}$, it produces the categories of fuzzy topological spaces in the sense of U. Höhle, T. Kubiak and A. Šostak. As a consequence, we conclude that the fuzzification framework of U. Höhle, T. Kubiak, A. Šostak and the approach framework of R. Lowen are "partially" dual to each other.

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