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The bi-clp-compact-open topology on function spaces. (English) Zbl 07673599
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Summary: In this paper, we studied the notion of clp-compact-open topology, bi-clp-compact-open topology and (weak) bi-clp-compact-open topology on $C(X, H)$, the set of all continuous functions from a topological space $X$ to a topological group $H$ and compare this topology with the bi-point-open topology and the bi-compact-open topology. In this setting, we studied properties like countability, metrizability and submetrizability. It is shown that for a clp-metrizable topological group $H$ and $H^{**}$-regular space $X$, $C_{clp}(X, H)$ is submetrizable if and only if $C_{ch}(X, H)$ is submetrizable.

MSC:
54C35 Function spaces in general topology
54H11 Topological groups (topological aspects)
54A10 Several topologies on one set (change of topology, comparison of topologies, lattices of topologies)
54C05 Continuous maps

Keywords:
function space; topological group; almost $\sigma$-clp-compact; hemiclp-compact; clp-compactness; set-open topology