Hereditary coreflective subcategories in categories of semitopological groups

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Let **A** be an epireflective subcategory of the category **STopGr** of all semitopological groups. It is well known that a coreflective subcategory of **A** is closed under the formation of coproducts and it is closed under the formation of extremal quotients if and only if it is monocoreflective. It is interesting to investigate the closedness of coreflective subcategories under other basic constructions. Productive coreflective subcategories were studied e.g. in [1], [2]. But little is known about hereditary coreflective subcategories.

We will present a description of the hereditary coreflective hull of a subcategory in **A**. Then we will focus on bicoreflective subcategories. It is easy to see that every hereditary coreflective subcategory of **A** is monocoreflective. We show that every hereditary coreflective subcategory that contains a group with a non-indiscrete topology is also bicoreflective in the categories **STopGr** and **QTopGr** (the category of all quasitopological groups). The situation is more complicated in other epireflective subcategories **A** of **STopGr**. We will present various sufficient conditions for a hereditary coreflective subcategory to be bicoreflective in **A**.

[1] H. Herrlich and M. Hušek, *Productivity of coreflective classes of topological groups*, Commentationes Mathematicae Universitatis Carolinae **40** (1999), no. 3, 551–560

[2] B. Batíková and M. Hušek, *Productivity numbers in paratopological groups*, Topology and its Applications **193** (2015), 167–174