Topological Closure of Translation-invariant Pre-orders

Gil Riella
Universidade de Brasília

Resumo/Abstract:
Our primary query is to find conditions under which the closure of a preorder on a topological space remains transitive. We study this problem for translation-invariant preorders on topological groups. We find that the closure of preorders and normal-orders remain as such in this context. The same is true for factor orders as well under quite general conditions. In the context of topological linear spaces, these results allow us to obtain a simple condition under which the order-duals with respect to a vector order and its closure coincide. We provide various order-theoretic applications of these results.