

A TOPOLOGICAL APPROACH IN THE EXTENDED FRAENKEL-MOSTOWSKI MODEL OF SET THEORY

BY

ANDREI ALEXANDRU and GABRIEL CIOBANU

Abstract. Lattices of subgroups are presented as algebraic domains. Given an arbitrary group, we define the Scott topology over the subgroups lattice of that group. A basis for this topology is expressed in terms of finitely generated subgroups. Several properties of the continuous functions with respect the Scott topology are obtained; they provide new order properties of groups. Finally there are expressed several properties of the group of permutations of atoms in a permutative model of set theory. We provide new properties of the extended interchange function by presenting some topological properties of its domain. Several order and topological properties of the sets in the Fraenkel-Mostowski model remains also valid in the Extended Fraenkel-Mostowski model, even one axiom in the axiomatic description of the Extended Fraenkel-Mostowski model is weaker than its homologue in the axiomatic description of the Fraenkel-Mostowski model.

Mathematics Subject Classification 2010: 20B07, 20E25, 03E25, 03E30.

Key words: Fraenkel-Mostowski model, Scott topology, subgroup lattice.