1125-20-659 **Martha Kilpack**, Dept. of Mathematics, Brigham Young University, Provo, UT 84602, and **Arturo Magidin*** (magidin@member.ams.org), Department of Mathematics, University of Louisiana at Lafayette, P.O. Box 43568, Lafayette, LA 70504-3568. *The lattice of algebraic closure operators on infinite subgroup lattices.*

Let G be a group, and let $L = \text{subgrps}(G)$ be the lattice of subgroups of G. A closure operator ϕ on L is algebraic if for every $H \leq G$, $\phi(H)$ is the subgroup generated by the closures $\phi(K)$, where K ranges over all finitely generated subgroups of H. The lattice of algebraic closure operators on L, $\text{aco}(L)$, is an algebraic lattice.

In prior work we determined that if G is finite, then a.c.o(L) is isomorphic to a subgroup lattice if and only if G is cyclic of prime power order; and we extended this to arbitrary finite lattices L (whether or not they are themselves subgroup lattices). We now investigate the case where G is infinite. We settle the case in which G has torsion, and the torsionfree case in which G has a nontrivial abelian normal subgroup (including the case when G is itself abelian). We conjecture that for infinite groups G, a.c.o(subgrps(G)) is isomorphic to a subgroup lattice if and only if G is isomorphic to the Prüfer p-group for some prime p. (Received September 08, 2016)