

1129-20-46

**Colin Reid** and **Phillip Wesolek\*** (pwesolek@binghamton.edu). *The essentially chief series of compactly generated locally compact groups.*

In locally compact groups, studying the tension between topological structure and geometric structure often yields surprising, general results. In this talk, we show the normal subgroup structure of a locally compact group is restricted by this tension. A closed normal factor  $K/L$  of a locally compact group  $G$  is called a chief factor if there is no closed normal subgroup of  $G$  strictly between  $L$  and  $K$ . We show that every compactly generated locally compact group  $G$  admits a finite series  $\{1\} = G_0 \leq G_1 \leq \dots \leq G_n = G$  of closed normal subgroups such that each normal factor  $G_i/G_{i-1}$  is either discrete, compact, or chief; such a series is called an essentially chief series. We then demonstrate a uniqueness result for essentially chief series. (Received February 16, 2017)