Peter Loth* (lothp@sacredheart.edu), Department of Mathematics, Sacred Heart University, 5151 Park Avenue, Fairfield, CT 06825. *Splitting pure extensions of LCA groups. Preliminary report.

In this paper, we study the concept of purity in the category of locally compact abelian (LCA) groups. Some structural information is given on those LCA groups $G$ such that every pure extension of $G$ splits. Letting $C$ denote the class of LCA groups which can be written as the topological direct sum of a compactly generated group and a discrete group, we determine the groups $G$ in $C$ which are pure injective in the category of LCA groups. Finally we describe those groups $G$ in $C$ such that every pure extension of $G$ by a group in $C$ splits and obtain a corresponding dual result. (Received September 01, 2005)