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Lou van den Dries and **Isaac M Goldbring*** (isaac@math.ucla.edu). *Globalizing locally compact local groups.*

Roughly speaking, a local group is a topological group for which only certain products are defined. It is assumed that the set of pairs of elements for which the product is defined is open. For example, any open neighborhood of the identity in a topological group is a local group; such a local group is said to be *globalizable*. The question of which local groups are globalizable has been a central question in the study of local groups. Cartan established that every local Lie group is globalizable and this result was extended by Goldbring to the class of locally euclidean local groups by solving the local version of Hilbert's Fifth Problem (Local H5). Using some of the nonstandard results which appeared in the proof of the Local H5, we show that every locally compact local group is globalizable. The aforementioned result is in some sense optimal for it is known that there are local Banach-Lie groups which are not globalizable. (Received August 10, 2010)