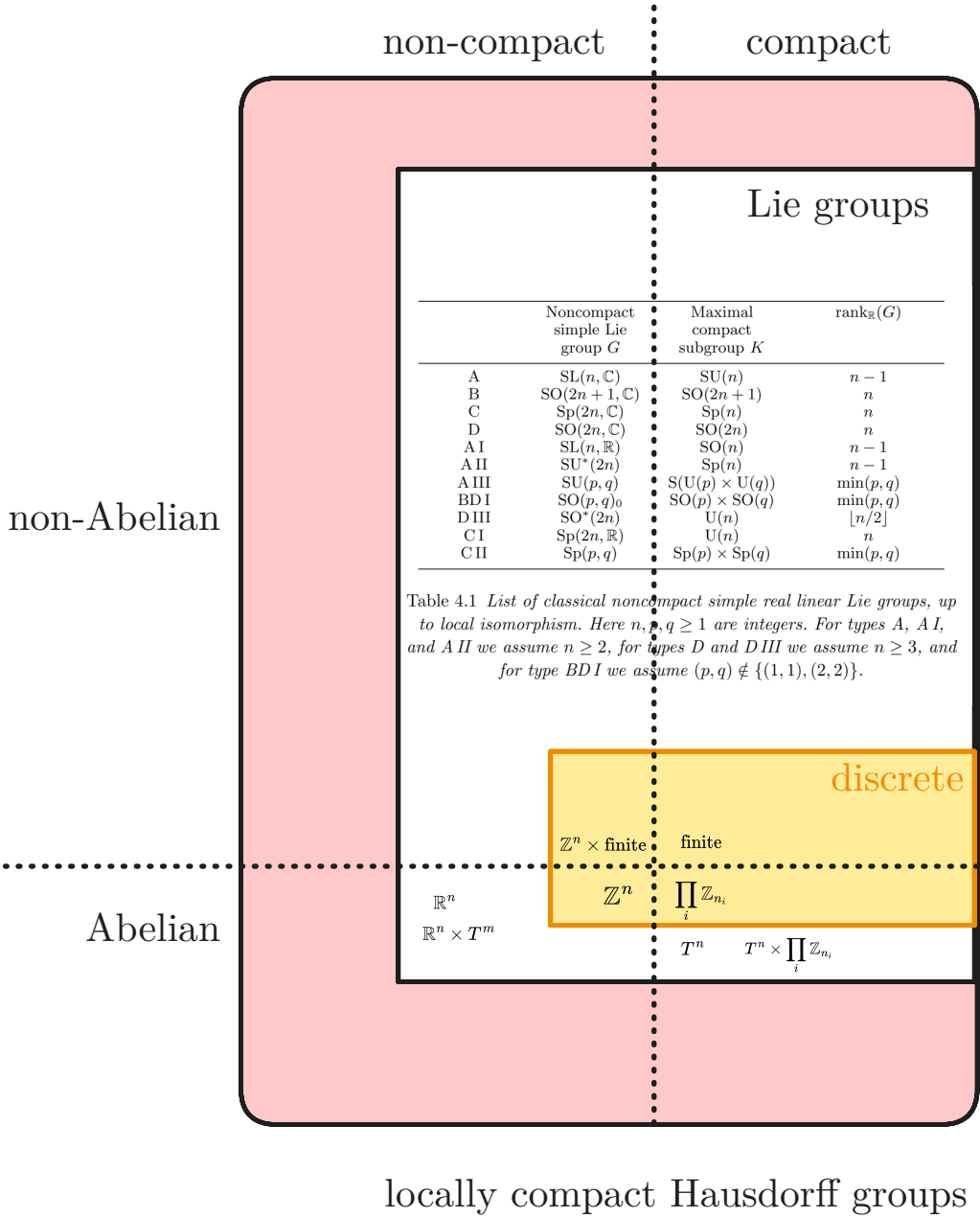


This note, that [was found here](#), as a part of [a collection](#) is written (completely with human hands) by [Rupadarshi Ray](#), was created on July 30, 2025 1:42:26 AM, was last modified on April 14, 2026 3:29:14 PM, and was exported on September 7, 2026 3:24:52 PM.

Locally compact Hausdorff topological group



Every locally compact group G posses a **left Haar measure** and it is unique up to a multiplicative constant.

Definition. Modular function of a locally compact group

Let ν be a left invariant Haar measure on a locally compact group G Then we have the **modular function**

$$\Delta_G : G \rightarrow \mathbb{R}_{>0}$$
$$\Delta_G(g) := \frac{\nu(Ag^{-1})}{\nu(A)}$$

for any $A \in \mathfrak{B}_G$.

Proposition: The modular function

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is a continuous group homomorphism.

Definition. If $\Delta(G) = \{1\}$ then G is called **unimodular**.

Current note has 2 direct children and 2 total descendants.

- structures based on sets
 - Topological spaces
 - Topological groups
 - Locally compact Hausdorff topological group
 - Regular representation of a locally compact group
 - Almost invariant vectors of a unitary representation

And it has 7 siblings.

- structures based on sets
 - Topological spaces
 - Topological groups
 - Uniformly continuous functions on a topological group
 - Any onb of identity of a connected topological group generates it
 - Image of discrete subgroups of topological groups
 - Rigidity of discrete groups in topological groups
 - Subsets of topological groups
 - Locally compact Hausdorff topological group

- Translation on a topological group