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**

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

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.