

Scarpa.

Riemannian geometry of Lie groups.

- G smooth mfd, $\mu: G \times G \rightarrow G$, $i: G \rightarrow G$.
- \mathfrak{g} = Lie algebra of left inv. v.f.s. on G
 $\rightarrow \forall x \in G, L_x: G \rightarrow G, y \mapsto xy$.
 $\Rightarrow dL_x x = x$

Def. a 1-param. subgroup of G is a group homomorphism
 $\gamma: (\mathbb{R}, +) \rightarrow (G, \cdot)$

\hookrightarrow 1-1 correspondence to $\frac{\mathfrak{g}}{\mathbb{R}}$