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Abstract :

Let G be a connected Lie group and $L(G)$ be its Lie algebra. An affine control system $\Sigma = (G, D)$ is defined by

$$\dot{g} = (X + D)_g + \sum_{j=1}^d u_j(t)(Y^j + D^j)_g$$

where $g \in G$, $X, Y^1, Y^2, \dots, Y^d \in L(G)$, $D, D^1, D^2, \dots, D^d \in \mathfrak{d}(L(G))$ and u_j are controls. Controllability problem is studied related to its associated bilinear part. There are results on Euclidean spaces of dimension n by Jurdjevic and Sallet, on Heisenberg Lie groups and Carnot Groups.