

Ghraïba, Mohamed**Semi-groupes intégraux de $SL(2, \mathbb{R})$. Application à la théorie du contrôle. (Integral semi-groups on $SL(2, \mathbb{R})$. Application to control theory).** (French) [Zbl 0602.93005](#)

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The subject of this work is the controllability problem for a family F of right invariant vector fields on the standard Lie group $SL(2, \mathbb{R})$. In particular, it is proven that F is controllable if and only if one of the following two cases occurs:

- 1) the cones generated by F and $-F$ coincide and $Lie(F) = sl(2, \mathbb{R})$;
- 2) the cones generated by F and $-F$ differ but the cone generated by F contains a compact element.

The main result is applied to the controllability problem on $GL^+(2, \mathbb{R})$, on S^1 and on $\mathbb{R}^2 \setminus \{0\}$.

Reviewer: [A.Bacciotti](#)**MSC:**

- [93B05](#) Controllability
- [93B03](#) Attainable sets, reachability
- [93C10](#) Nonlinear systems in control theory
- [22E99](#) Lie groups

Keywords:[integral semi-groups](#); [accessibility](#); [Lie group](#)