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Title: Polynomial bases of split simple Lie algebras

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We show that every simple Lie algebra $\mathfrak{g}$ of real rank at least two is isomorphic to a space of polynomials defined on the group $N = \exp \mathfrak{n}$, where $\mathfrak{n}$ is the nilpotent component of the Iwasawa decomposition of $\mathfrak{g}$. Using suitable coordinates on N , we then write a basis of this space of polynomials when $\mathfrak{g}$ is split.

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