Tranisitive nilpotent local Lie algebras of vector fields can be easily constructed from dilations $h$ of $\mathbb{R}^n$ with positive weights (give me a sequence of $n$ positive integers and I will give you a transitive nilpotent Lie algebra of vector fields on $\mathbb{R}^n$) as the Lie algebras $\mathfrak{g}_{<0}(h)$ of the polynomial vector fields of negative weights with respect to $h$.

We provide a condition for the dilation $h$ such that the Lie algebras of polynomial vectors defined by $h$ are exactly the Tanaka prolongations of the corresponding nilpotent Lie algebras $\mathfrak{g}_{<0}(h)$. However, in some cases of dilations $h$ we can find some ‘strange’ elements of the Tanaka prolongations of $\mathfrak{g}_{<0}(h)$, which we describe in detail. In particular, we give a complete description of derivations of degree 0 for the Lie algebra $\mathfrak{g}_{<0}(h)$.

**Keywords:** Vector field, nilpotent Lie algebra, dilation, derivation, homogeneity structures.

**MSC:** 17B30, 17B66; 57R25, 57S20.