Romney, Matthew; Vellis, Vyron
Bi-Lipschitz embedding of the generalized Grushin plane into Euclidean spaces. (English)
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Summary: We show that, for all $\alpha \geq 0$, the generalized Grushin plane $G_\alpha$ is bi-Lipschitz homeomorphic to a 2-dimensional quasiplane in the Euclidean space $\mathbb{R}^{\lfloor \alpha \rfloor+2}$, where $\lfloor \alpha \rfloor$ is the integer part of $\alpha$. The target dimension is sharp. This generalizes a recent result of J.-M. Wu [Ann. Sc. Norm. Super. Pisa, Cl. Sci. (5) 14, No. 2, 633–644 (2015; Zbl 1329.53048)].

MSC:
53C17 Sub-Riemannian geometry
30L05 Geometric embeddings of metric spaces
30L10 Quasiconformal mappings in metric spaces

Keywords:
generalized Grushin plane; quasiplane; bi-Lipschitz embedding

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