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Vasilis Chousionis and **Jeremy T Tyson*** (tyson@math.uiuc.edu), 1409 West Green Street, Urbana, IL 61801, and **Mariusz Urbanski**. *Conformal graph directed Markov systems in Carnot groups of Iwasawa type.*

We develop a theory of conformal iterated function systems (IFS) and graph directed Markov systems (GDMS) in nilpotent stratified Lie groups equipped with a sub-Riemannian metric (a.k.a. Carnot groups). Our theory extends known results for self-similar IFS in Carnot groups to the case of infinite alphabets. It applies also to nonlinear conformal GDMS in Carnot groups. Of particular interest are the Carnot groups of Iwasawa type, which arise as local models for the boundaries at infinity of the classical rank one symmetric spaces. This class of Carnot groups includes the usual Heisenberg group as well as its quaternionic and octonionic counterparts. The group of conformal self-maps of an Iwasawa group is rather rich, for instance, it is two-point transitive with nontrivial stabilizer subgroups. We develop a thermodynamic formalism for Iwasawa conformal GDMS and, under suitable hypotheses, identify the Hausdorff dimension of the limit set as the unique zero of the pressure function. We investigate when the Hausdorff or packing measures of the limit set in its natural dimension is positive and finite. As an application, we estimate dimensions of limit sets arising from Heisenberg continued fractions. This talk is based on joint work with Vasilis Chousionis and Mariusz Urbański. (Received August 17, 2015)