1116-51-1517 **Alex D Austin*** (alexander.austin@gmail.com). *Logarithmic Potentials and Quasiconformal Flows on the Heisenberg Group.* Preliminary report.

The Heisenberg group $\mathbb{H}$ is an important example in analysis (e.g. several complex variables), geometry (e.g. complex hyperbolic), algebra (e.g. nilpotent groups), and applications (e.g. math biology). It is therefore imperative that, given a metric space X, we are able to say when it is essentially the same as $\mathbb{H}$ in that there exists a bi-Lipschitz mapping $f : X \to \mathbb{H}$.

I exhibit a family of metric doubling measures on $\mathbb{H}$, weighting Lebesgue measure with (the exponential of) certain logarithmic potentials. Each associated metric is shown to be bi-Lipschitz equivalent to the usual sub-Riemannian metric on $\mathbb{H}$ by constructing a quasiconformal mapping of $\mathbb{H}$ with Jacobian comparable to the weighting. To do this I establish results of independent interest in the theory of quasiconformal flows on $\mathbb{H}$, building on the work of Korányi and Reimann. The scheme follows analogous work of Bonk, Heinonen and Saksman in the Euclidean setting.

Along the way I confront the limitations of conformal mappings of $\mathbb{H}$, explain how the radial stretch mappings of Balogh, Fässler and Platis inspired a key step, and mention future work on a possible connection to the CR notion of Q-curvature. (Received September 20, 2015)