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**Vasilis Chousionis, Valentino Magnani and Jeremy T Tyson\*** (tyson@illinois.edu), 1409 West Green Street, Urbana, IL 61801. *Uniform measures and the geometry of submanifolds in the Heisenberg group*. Preliminary report.

A Borel measure on a metric space is said to be  $s$ -uniform if the measure of every ball of radius  $r$  is proportional to  $r^s$ , with a fixed proportionality constant. In Euclidean space, such measures are classified in low dimension and in low codimension, however, the full classification of uniform measures remains an open problem. I will discuss ongoing work (joint with Vasilis Chousionis and Valentino Magnani) on the classification of uniform measures in the sub-Riemannian Heisenberg group equipped with the Koranyi metric. Following an approach of Kowalski and Preiss, we analyze the structure of low codimensional uniform measures via an asymptotic formula for the volume of Koranyi balls of small radius on smooth surfaces. Our formula involves several intrinsic notions of sub-Riemannian curvature associated to such surfaces. I will give a brief overview of relevant aspects of the geometry of smooth submanifolds in sub-Riemannian spaces. (Received January 28, 2016)