

## **M. Buliga : metric spaces with dilations and sub-riemannian geometry from an intrinsic point of view**

This course will begin by giving an introduction to the study of metric spaces with dilations (semigroup bundle of approximative contractions over a metric space). Then, we will explain some algebraic constructions, which applied in sub-riemannian geometry context, helps to understand the intrinsic part of this geometry in various technics used in differential calculus used in this domain

References

M. Buliga, Dilatation structures I. Fundamentals, J. Gen. Lie Theory Appl., Vol 1, No. 2, 65-95, 2007.

M. Buliga, Infinitesimal affine geometry of metric spaces endowed with a dilation structure, Houston J. Math., 36, 1,91-136, 2010

M. Buliga, Dilatation structures in sub-riemannian geometry, in:"Contemporary Geometry and Topology and Related Topics", Cluj-Napoca, Cluj University Press (2008), 89-105

M. Buliga, A characterization of sub-riemannian spaces as length dilation structures constructed via coherent projections, (submitted),  
preprint version: <http://arxiv.org/abs/0810.5042>