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Wednesday, February 18, 2015  
2:00 PM  
258 Hurley Hall

**Title:** Topological groups, infinitesimal-types and their stabilizers

**Abstract:**

It is known that in o-minimal structures, an unbounded curve inside a definable group  $G$  gives rise to a one-dimensional torsion-free definable subgroup of  $G$ , associated to the curve "at infinity" (a result with Steinhorn, 1999). I will recall this construction and describe a generalization of that theorem to definable types of arbitrary dimension: Every definable type  $p$  inside  $G$  gives rise to a definable, torsion-free subgroup  $H_p$ , whose dimension can be read-off the type  $p$ .

As we will see, the group  $H_p$  is the stabilizer of a partial type associated  $p$ , under the action of  $G$  on a quotient of the usual type space  $S(G)$ . It turns out that this quotient is closely related to the classical construction of Samuel's compactification of topological groups (viewed as  $G$ -spaces) and more generally of spaces with uniformity. Thus, this work is also related to Topological dynamics. Joint work with S. Starchenko.