

## Geometry, Topology and Dynamics Seminar

### *Translation-like actions of nilpotent groups*

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**Abstract:** Whyte introduced translation-like actions of groups which serve as geometric generalization of subgroup containment. He then proved a geometric reformulation of the von Neumann conjecture by demonstrating a finitely generated group is nonamenable if and only if it admits a translation-like action by a non-abelian free group. This provides motivation for the study of what groups can translation-like on other groups. As a consequence of Gromov's polynomial growth theorem, only nilpotent groups can act translation-like on other nilpotent groups. In joint work with David Cohen, we demonstrate if two nilpotent groups have the same growth, but non-isomorphic Carnot completions, then they can't act translation-like on each other.

Monday, October 23 at 3:00 PM in SEO 636