

# First Joint Meeting Brazil Italy of Mathematics

## Special Session: Group Theory

Rio de Janeiro, August 29 - September 02, 2016

**Title:** Decision problems and subgroups in higher dimensional Thompson groups

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**Abstract:** Higher dimensional Thompson groups  $nV$ , first introduced by Brin, are groups of homeomorphisms of powers of the Cantor set. Their description is similar to those of the classical Thompson groups  $F, T, V$  but elements present substantial differences, such as having chaotic dynamics. This leads to the existence of undecidable decision problems and makes it harder to work within this group.

In this talk we describe recent results in understanding the dynamics of elements and why it is hard to understand it in most cases and we show that they contain the wide class of right-angled Artin groups as subgroups (which contains, for example, surface groups), leading to further information about decision problems in these groups and recovering another proof that right-angled Artin groups can be realized using asynchronous automata (parts of this work are joint with James Belk, Collin Bleak, Conchita Martinez-Perez and Brita Nucinkis)