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Generalized word problem in automata groups.

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Abstract:

Generalized word problem (or the subgroup membership problem) asks to decide algorithmically whether a given element of a finitely generated group belongs to a given finitely generated subgroup of the group. In the study of groups which are defined by their action on an infinite rooted tree (like self-similar groups, or branch groups, or automata groups), an important class of subgroups is that of stabilizers of the vertices in the tree and of the infinite rays that form its boundary. Stabilizers of infinite rays are in general not finitely generated, but the membership problem to the stabilizer is still well posed – and will be discussed in the talk – if the infinite ray has a finite description.

The talk is based on a joint work with A. Bishop, D. D’Angeli, F. Matucci, D. Perego and E. Rodaro.