

# Conciseness of words in residually finite groups

Marta Morigi<sup>1</sup>

<sup>1</sup> Università di Bologna

Given a group-word  $w$  and a group  $G$ , the verbal subgroup  $w(G)$  is the one generated by all  $w$ -values in  $G$ . The word  $w$  is said to be concise if  $w(G)$  is finite whenever the set of  $w$ -values in  $G$  is finite. In the sixties P. Hall asked whether every word is concise but later Ivanov answered this question in the negative. On the other hand, Hall's question remains wide open in the class of residually finite groups. We show that various generalizations of the Engel word are concise in residually finite groups.