

# An introduction to geometric group theory : growth function of groups.

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Abstract : Given a discrete finitely generated group, one can endow him with a "word metric", interpreted as a graph distance. The growth function of that group is the function that associate for any interger  $n$  the cardinality of the balls of radius  $n$  for this metric. The goal of this talk is to give an introduction to geometric group theory, whose objective is to draw links between algebaric group properties and geometric properties of word metrics. First, we will give definitions and see possible bahaviours for the growth function. Secondly, we will see examples of algebaric properties that the growth function remembers or forgets. We will see many examples.