

# Strong and weak scalability

Simone Amadio

The aim of this exercise is to verify the Amdahl and Gustafson's laws through the execution of a given program. The program estimates  $\pi$  using a montecarlo method.

## 1 Serial code

I run the serial program given with 1000 points. However this choice made negligible the CPU time so I decided to run it with  $10^9$  points. The time, measured through the command `usr/bin/time`, is  $25.45 \pm 0.05$  s.

## 2 Strong scaling

According to Amdahl's law, the speedup  $S$

## 3 Weak scaling