Analysis of dense matrix vector multiplication

Ludovico Bessi

Matematica per l'ingegneria Politecnico di Torino

May 2019



- Introduction and tools used
- Different implementations
- 3 Comparison with Eigen
- 4 OpenMP
- 5 Conclusions



Sample frame title

Introduction and tools used

In this slide, some important text will be highlighted because it's important. Please, don't abuse it.

Remark

Sample text



Sample text



Sample text



What is OMP?

OMP IS BLABLABLA



Case study

big n fast code



• Outperformed Eigen when n = 40



Achievements

- Outperformed Eigen when n = 40
- Outperformed Eigen when n = 400 and O2 flag is chosen.



Future directions

Cache aware roof line model



- Cache aware roof line model
- SIMD vectorization



Future directions

- Cache aware roof line model
- SIMD vectorization
- GCC behaviour when matrix is saved in L1

