

Parallel Fast Gauss Transform

16 November 2010

Outline

1 Introduction

2 Translation

3 Octree

4 Results

5 Conclusions

Outline

- 1 Introduction
- 2 Translation
- 3 Octree
- 4 Results
- 5 Conclusions

Introduction

$$F(x) = \int_{\Omega} \|x - y\|^{2n} e^{-\frac{\|x-y\|^2}{\delta}} f(y) d\Omega$$

Outline

- 1 Introduction
- 2 Translation**
- 3 Octree
- 4 Results
- 5 Conclusions

Outline

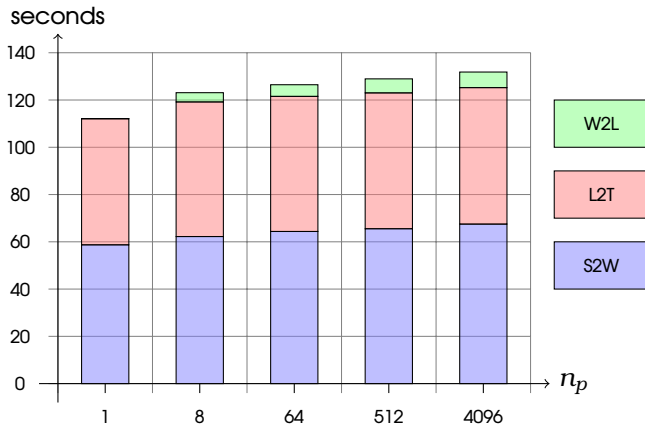
- 1 Introduction
- 2 Translation
- 3 Octree**
- 4 Results
- 5 Conclusions

Outline

- 1 Introduction
- 2 Translation
- 3 Octree
- 4 Results**
- 5 Conclusions

Results

Uniform distribution

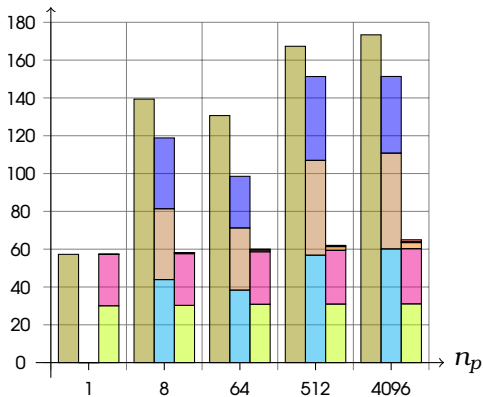


$\approx 30\text{M Points/CPU}$

Results

Gaussian distribution

seconds



D2L	0	43.93	38.37	56.84	60.18
W2D	0	37.48	32.88	50.16	50.65
D2D	0	37.46	27.31	44.36	40.56
L2T	30.07	30.27	30.86	30.97	31.08

Outline

- 1 Introduction
- 2 Translation
- 3 Octree
- 4 Results
- 5 Conclusions**

Thank You !