

# Thesis defense

Philip Lykke Carlsen

March 14, 2013

# Introduction

We have surveyed current vectorprogramming languages

We found each lacking in expressivity

We have identified a possible remedy for nested parallelism

# Motivation – Why?

Various disciplines have ceaseless needs for computational performance

No more expected sequential speed improvements from moores law

Need to parallelise instead

x

Contemporary solution is heterogeneous, but expressionally unwieldly

Thus, we need better programming languages.

# Option pricing

# GPUs

...

# Parallel programming

SIMD - data parallelism

Many problems are naturally expressed using nested data parallelism

Either need to use flattening-transformation or limit expressivity

