Implementing Fast Multipole Methods with High Level Interpreted Languages

Srinath Kailasa

Department of Mathematics University College London

September 8, 2020



Fast Multipole Methods (FMMs)

PyExaFMM

Research Context



Fast Multipole Methods (FMMs)
Motivation
Analytic FMM
Kernel Independent FMM

PyExaFMM

Research Context



Motivation



Analytic FMM



Kernel Independent FMM



Fast Multipole Methods (FMMs)

PyExaFMM Motivation Goals Outcomes

Research Context



Motivation



Goals



Outcomes



Fast Multipole Methods (FMMs)

PyExaFMM

Research Context Modern Architectures Low-Rank Compression



Modern Architectures



Low-Rank Compression

