Optimal Execution of Homogeneous Tasks With Unequal Run-times

How to optimize m ?

Analytical Optimization:

- Need to predict the PDF of the execution times required for the different experiments
- Possible for simple distributions (e.g. uniform, Poisson, Geometric, ...)

Run-time Optimization:

- Build the PDF by monitoring the execution times of an initial pool of experiments
- Adaptively optimize m as more experiments are executed

**** The above can be extended to nested experiments!***

Interesting problems

- Introduction of appropriate constructs to parallel programming languages

- Compiler optimizations techniques to make use of this idea

- How better is asynchronous massive parallelism (i.e. CM-2 vs CM-5)