

- Part 1:
 - Motivation
 - Notations and Definitions
 - Problems and Challenges
 - Parallel Programming Models
- Part 2: Shared Memory Architecture
- Part 3: Distributed Memory Architecture
- Part 3: GPGPU and Nvidia CUDA

Motivation

- Atmosphere, Earth, Environment
- Physics - applied, nuclear, particle, condensed matter, high pressure, fusion, photonics
- Bioscience, Biotechnology, Genetics
- Chemistry, Molecular Sciences
- Geology, Seismology
- Mechanical Engineering - from prosthetics to spacecraft
- Electrical Engineering, Circuit Design, Microelectronics
- Computer Science, Mathematics
- Defense, Weapons

