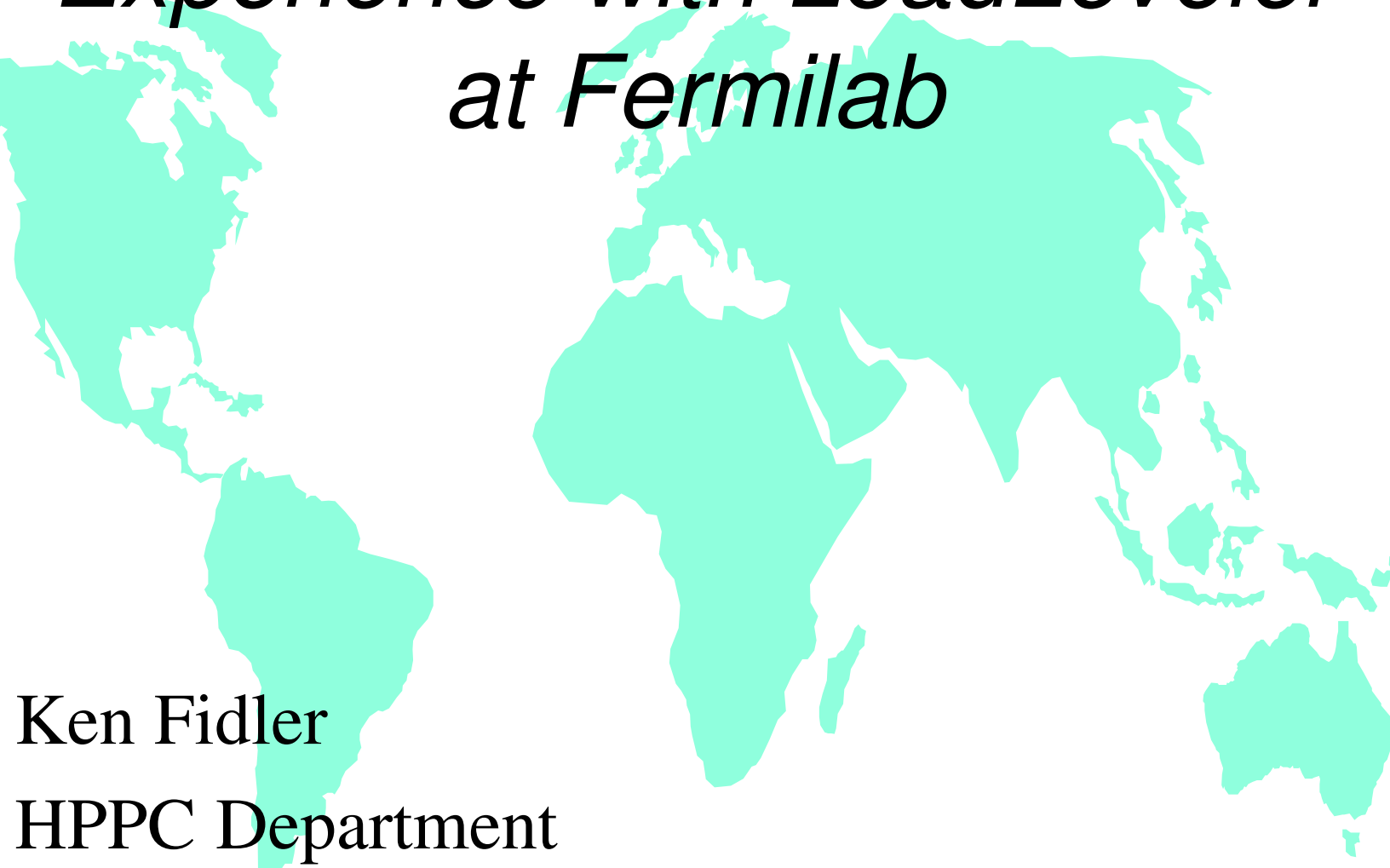
Experience with LoadLeveler at Fermilab



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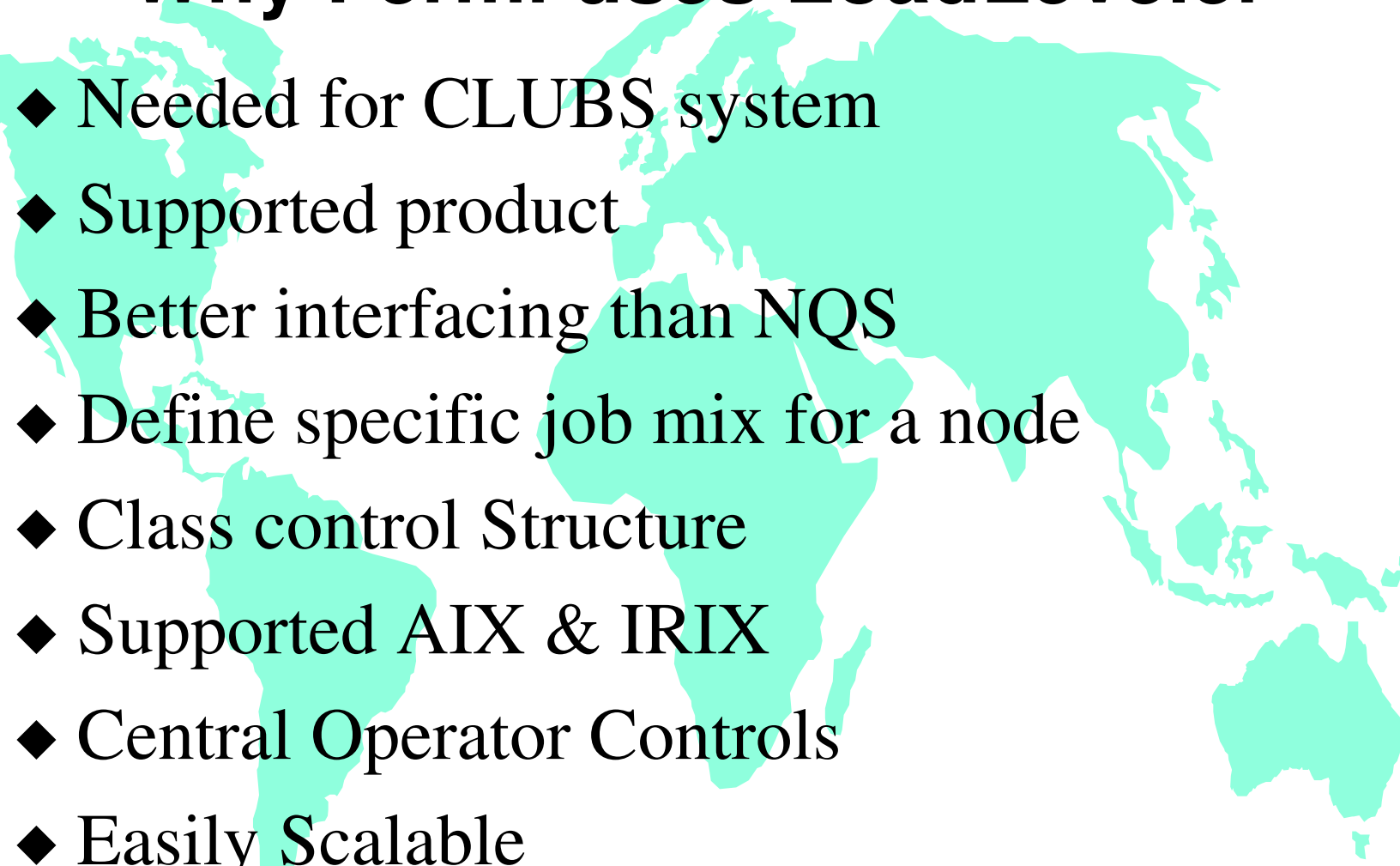
What is LoadLeveler

- Batch & Interactive load scheduler from and supported by IBM
- Serial & Parallel Processing
- Based on CONDOR
- Supports Multi platforms
- Scavenge or dedicated worker nodes

Why Fermi uses LoadLeveler



- Needed for CLUBS system
- Supported product
- Better interfacing than NQS
- Define specific job mix for a node
- Class control Structure
- Supported AIX & IRIX
- Central Operator Controls
- Easily Scalable
- Future IBM SP1 system considerations

LoadLeveler Experiences - Pluses:

- Successful implementtion on CLUBS
- Very stable
- GUI provides easy operator controls
- Easy to add nodes in/out of cluster
- SCRIPT language fairly simple
- Good blend with interactive system (FNALU)

LoadLeveler Experiences - Minuses:

- No Program Exits for Administrator Needs
  - No pre and post processing (now in 1.2)
  - No submit exit (now in 1.2)
  - no job selection/policy exit
- No fair share job selection - FIFO only
- No job chaining or prior job dependency (now in 1.2)
- No UNIX group controls (partly fixed in 1.2)
- CPU time limits not averaged for various machine types

LoadLeveler Potential Improvements:

- Better administrator tools
  - drain/resume by class
  - better system monitoring
- More flexibly on defining work load for a node
- Alternate Central Scheduler (now in 1.2)