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**Environment Modules on HPC Clusters** 

A. Kohlmeyer
ICTP, Trieste/University of Philadelphia
USA

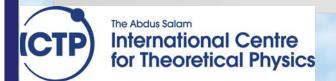
# **Environment Modules on HPC Clusters**

Dr. Axel Kohlmeyer

Sr. Scientific Computing Expert ICTP, Trieste

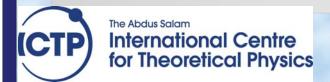
Associate Dean for Scientific Computing Temple University, Philadelphia

http://sites.google.com/site/akohlmey/



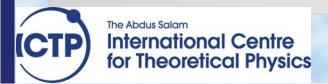
## Motivation

- On HPC clusters it is often desirable to have multiple versions of the same software installed
- Changing environment variables like \$PATH manually to accommodate this is tedious
- Corresponding shell scripts would have to be written for multiple script languages
- All of these explicit steps are error prone and difficult to maintain
- There is no simple upgrade path



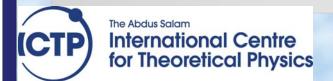
### **Environment Modules**

- Written in Tcl as portable "meta language"
- Actions programmed in Tcl result in actions that are translated for a particular shell syntax
- Easy to append or prepend to a "path" variable
- Installation of individual software packages into specific individual directories
- Logical grouping of "module tree" (pkg/version)
  - usually "flat" but can be nested
  - scripting allows dependencies



### Global module Commands

- module avail
   Displays the current available module tree
- module list
   Displays currently loaded modules
- module purge
   Deletes all modules from list of loaded
- module whatis
   Displays a 1-line info for all available modules



### Individual Module Commands

- module load <package>
   Loads the current default module of package
- module load <package>/<version>
   Loads the specific version version of package
- module unload <package>
   Removes module package from environment
- module display <package>
   Displays commands triggered by module load
- module help <package>

