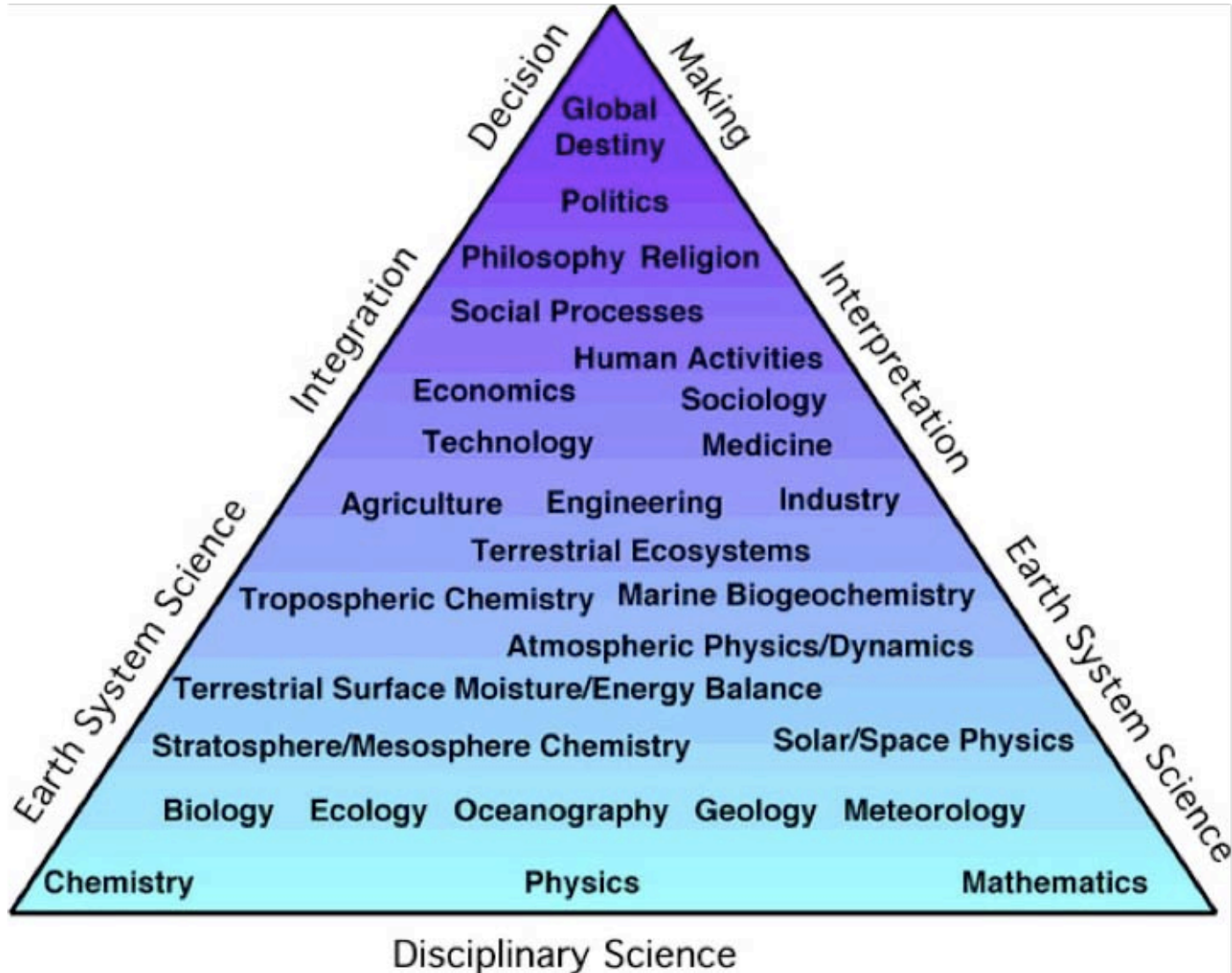
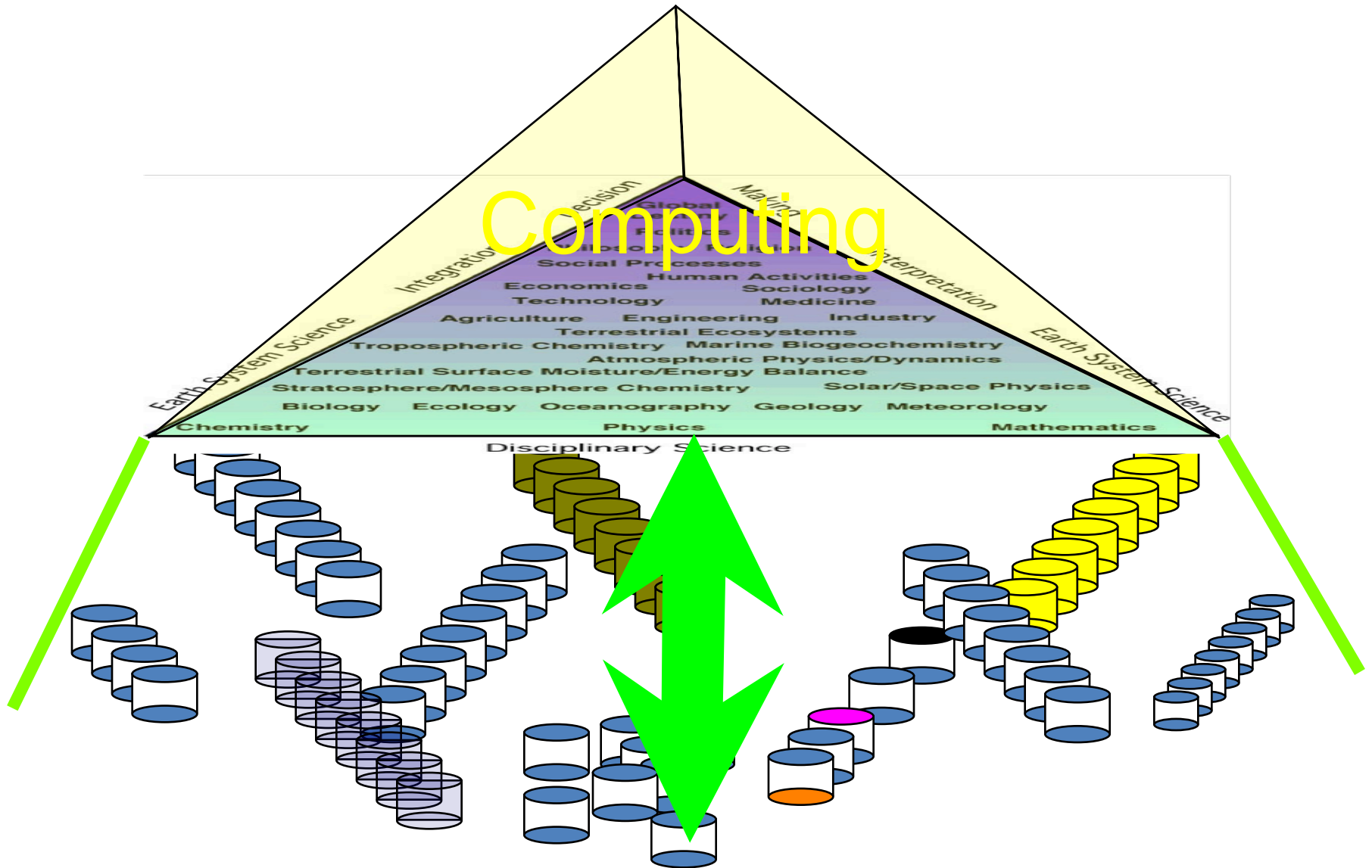



# Earth System and Climate Science



# Earth System and Climate Science



enes



*European  
Network  
for Earth  
System  
Modelling*

# ENES – Climate: Scope

- ENES is intended to

- Data
- help in the development and evaluation of state-of-the-art climate and Earth system models,
  - facilitate focused model inter-comparisons in order to assess and improve these models,
  - encourage exchanges of software and model results, and
  - help in the development of high performance computing facilities dedicated to long high-resolution multi-model ensemble integrations.

# ENES – Climate: Organisation

- ~ 50 member institutions from
- 15 European countries
- National and EC funds
- Some funding statements until 2013
- Long-term institutional commitment from some members available
- Large infrastructure FP7 project for ENES has started: IS-ENES

# ENES – Climate: Data

- Needs for pan-European Data Services
  - Services to store, retrieve and compare research data
  - A service layer for transition of research data into community data including long-term archiving and open access
  - A trusted domain for long-term data preservation and federated data access
  - Interdisciplinary data utilization is requested for mitigation of and adaptation to climate change

# Interoperability drawbacks in Earth system model data usage

- Interdisciplinary research presently has problems in model data utilization across disciplines
- Federation of geographically distributed data archives is requested

## Related areas of problems:

- Metadata:
  - Problem: Discipline specific and development specific metadata models and list of values
  - Improvement: agreed metadata model and controlled vocabularies (METAFOR / CIM as federated data model)
  - Improvement: Mapping from legacy data model archives to CIM is in the responsibility of the individual archives
  - Improvement: Mapping to interdisciplinary vocabularies on the basis of personal communication, systematic solution like thesauri are discussed

# Interoperability drawbacks in Earth system model data usage

- Data storage and formats
  - Problem: Non modeling communities are not used to data storage (coordinate systems) and model data formats
  - Improvement: Application adapted data products are pre-processed and disseminated (time series of individual variables)
  - Improvement: Application adapted server side data processing is offered for data reduction and format conversion (national data Grid projects, EU IS-ENES)
- Model data interpretation
  - Problem: Non modeling communities have problems in applying and interpreting climate model data
  - Improvement: Guidance on using and interpreting climate model data is provided on-line and on basis of personal communication (IPCC Data Distribution Centre, National Weather Services, Climate Service Centre in Hamburg)

# IS-ENES ESM Data Network

