

# The Analysis of Distributed Data



# The Analysis We Would Like To Do

- Weighted Averages
- Regional Averages
- Correlation Maps
- Regression
- Solve Systems of Linear Equations
- Singular Value Decomposition

# Singular Value Decomposition



- **Factorization of Matrices**
- **Enable identification of most significant factors in the simulations**

# Requirements

**To perform this analysis in an effective manner, the following requirements are made of the system.**

- **The data must not travel if at all possible**
- **The control communications must not be fine grained**
- **The system must be dynamically extendible**
- **The system must be dynamically expandable**
- **It must have a simple user interface**

# System Structure

**This means that the system must have the following properties.**

- **Data must be passed by reference**
- **Functions must be composable**
- **Users have a single point of access**
- **Interfaces are not restricted to current functions**
- **The structure must be a hierarchy**

# Other Issues Raised

- **Data access must be thread safe**
- **Data cannot be moved instead it must be copied**
- **Functions must be called by reference**
- **Each piece must be independently deployable**

# Design Decisions Taken

- **System based on Web Services with SOAP messages**
- **Web Services supported by standardised SOAP containers**
- **Data transfer to be done by other means e.g. FTP**