



- **CS SI engineers global and secure solutions**
 - Convergence of communication and information systems
 - Prime contractor experience (large and complex projects)
 - Customer-oriented organisation
 - CS SI staff 3900
- **CS SI has leading positions**
 - **Aerospace** : French market leader in software and computer services for the space industry
 - **Scientific engineering** : leading European pole (e.g. nuclear research)
 - **Network services** : leading French supplier in network and communication systems integration
- **CS SI is member of the DataGRID consortium**



Space Weather CS SI/CESR Teaming

CS SI Management

WP 2220
Requirements

WP 4220
Prototyping

CS SI Tasking

Analyse algorithms
requirements
Draft prototype
implementation plan

Design architecture
Install middleware
Perform conversion
Run and test

CESR Tasking

Analyse high level
simulation threads
requirements
Map reqs to prototype

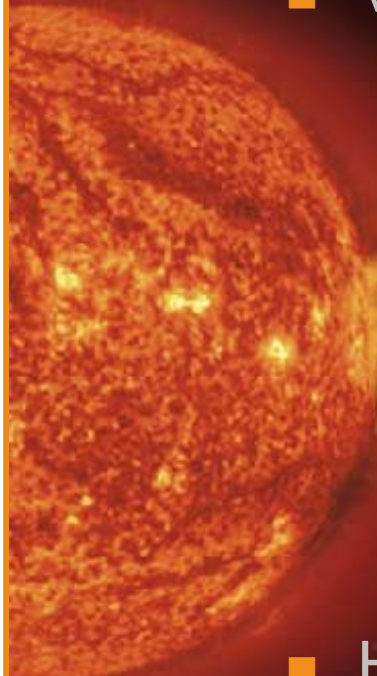
Transfer SW
Support conversion
Run and test
Validate and report



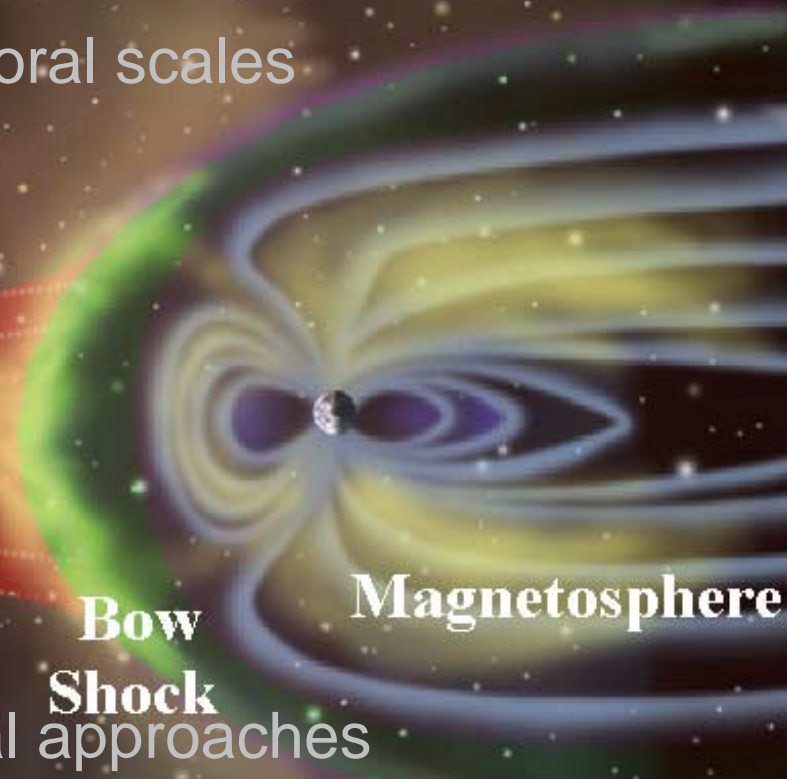


Space Weather Global problem

- 3D MHD plasma flow
- Various spatial and temporal scales
⇒ Segmentation



Solar Wind



Bow Shock

Magnetosphere

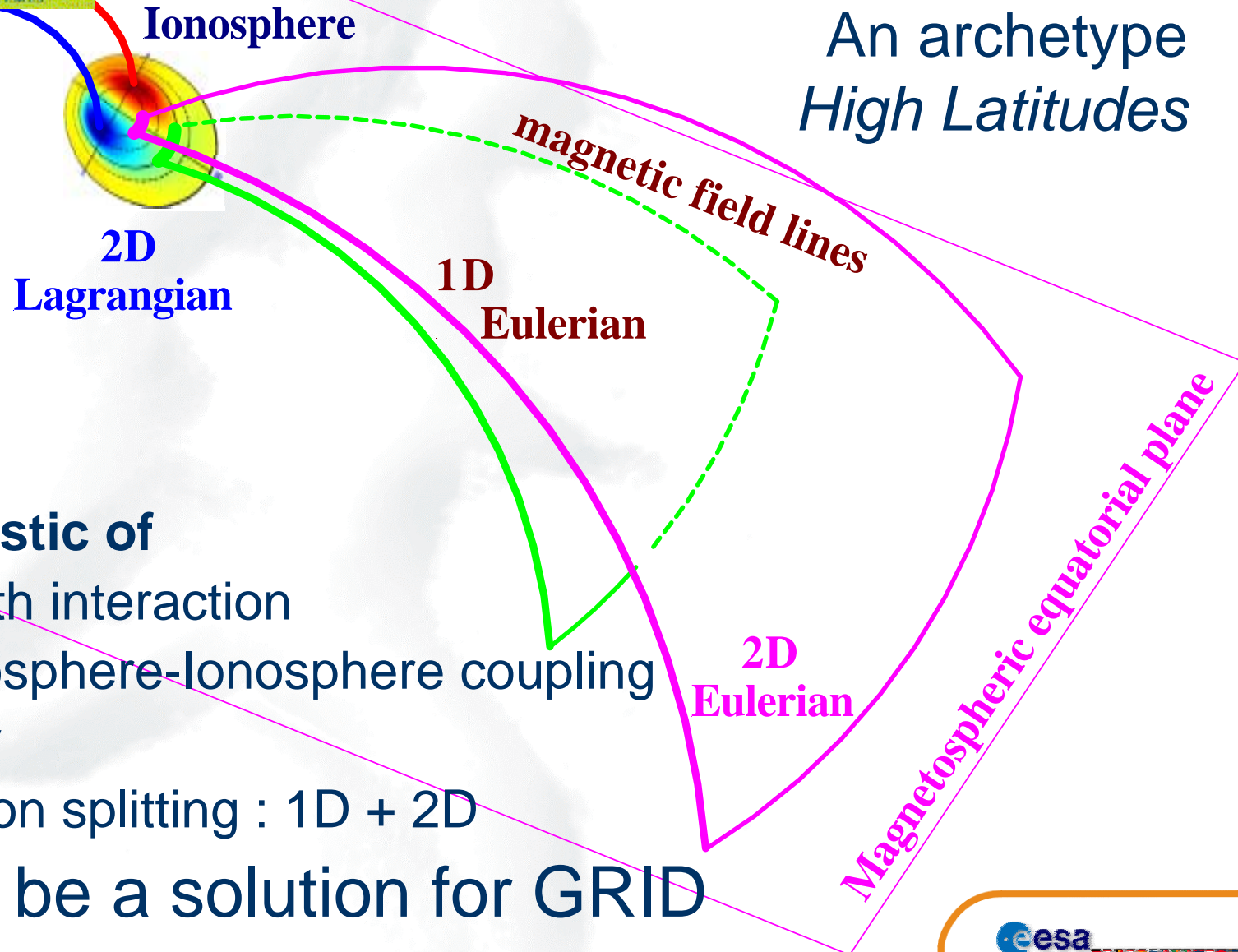
- Heterogeneous numerical approaches
- Complex couplings

⇒ **No forecast affordable**



Space Weather

An archetype
High Latitudes



Characteristic of

- Sun-Earth interaction
- Magnetosphere-Ionosphere coupling

Specificity

- Dimension splitting : 1D + 2D

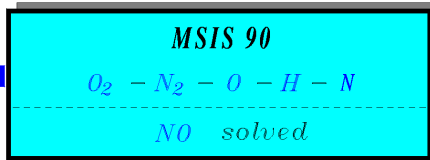
⇒ **May be a solution for GRID**



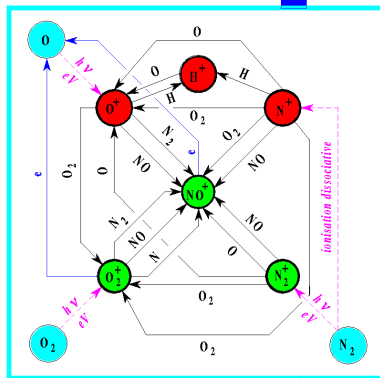
Space Weather Model Synopsis

ATMOSPHERE

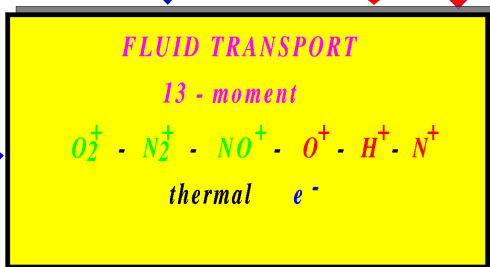
SUN



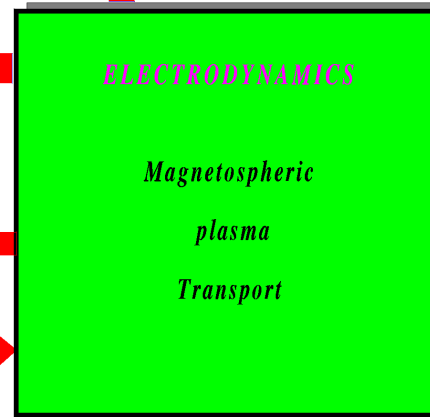
Precipitations



- Population
- Complexity
- Couplings
- Algorithms

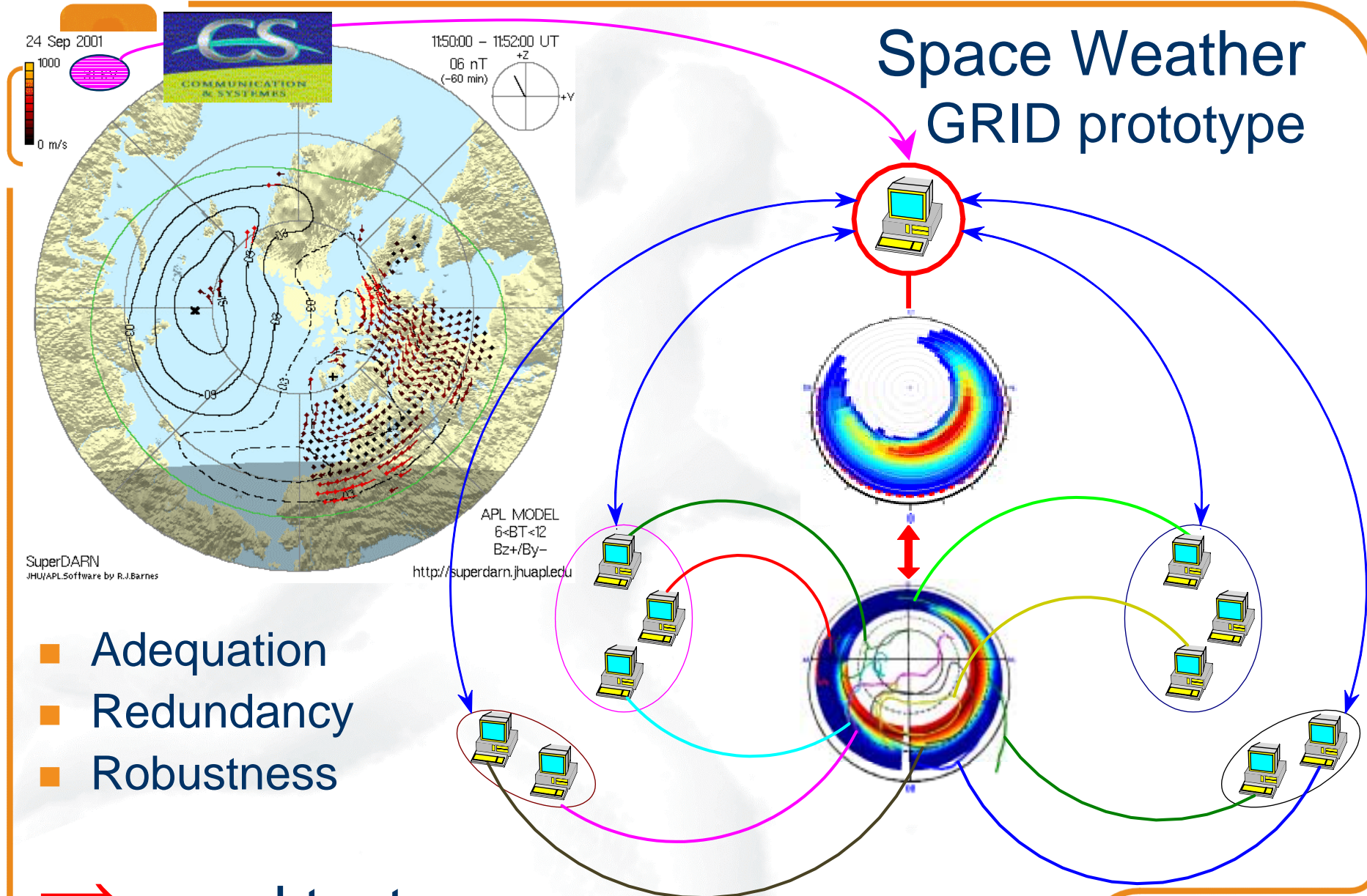


Field-aligned
Currents $J_{||}$



Conductivities Σ

Space Weather GRID prototype



- Adequation
- Redundancy
- Robustness

⇒ good test