

# Community-Wide GEM-CEDAR Modeling Challenge

Space Environment modeling is not just collections of models. Confidence assessment of model predictions is an essential element.

- ✓ **Quantitative assessment** of models ability to simulate and predict space environment events and impact on human and technologies.
- ✓ Facilitate interaction between developers and users of space environment models.
- ✓ Define **physical parameters** and **metrics formats** relevant to specific applications.
- ✓ Address **uncertainties** in model-data comparisons.

CCMC provides support by archiving results and developing **on-line interactive model validation systems**, coordinate community tools development.

**Joint publications** (> 10 participating models, 8 papers)

**FOCUS SO FAR:** Comparison of time series from model and observation at specific locations/trajectories.

# Processes for Validation

(Tim Fuller-Rowell)

**Process 1: Quantifying the storm energy input.**

Process 2 and 8: Combined penetration and dynamo electric fields and EIA response

**Process 3: Build-up of plasma and structure at mid-latitudes**

Process 4: Gravity wave propagation from high to low latitude

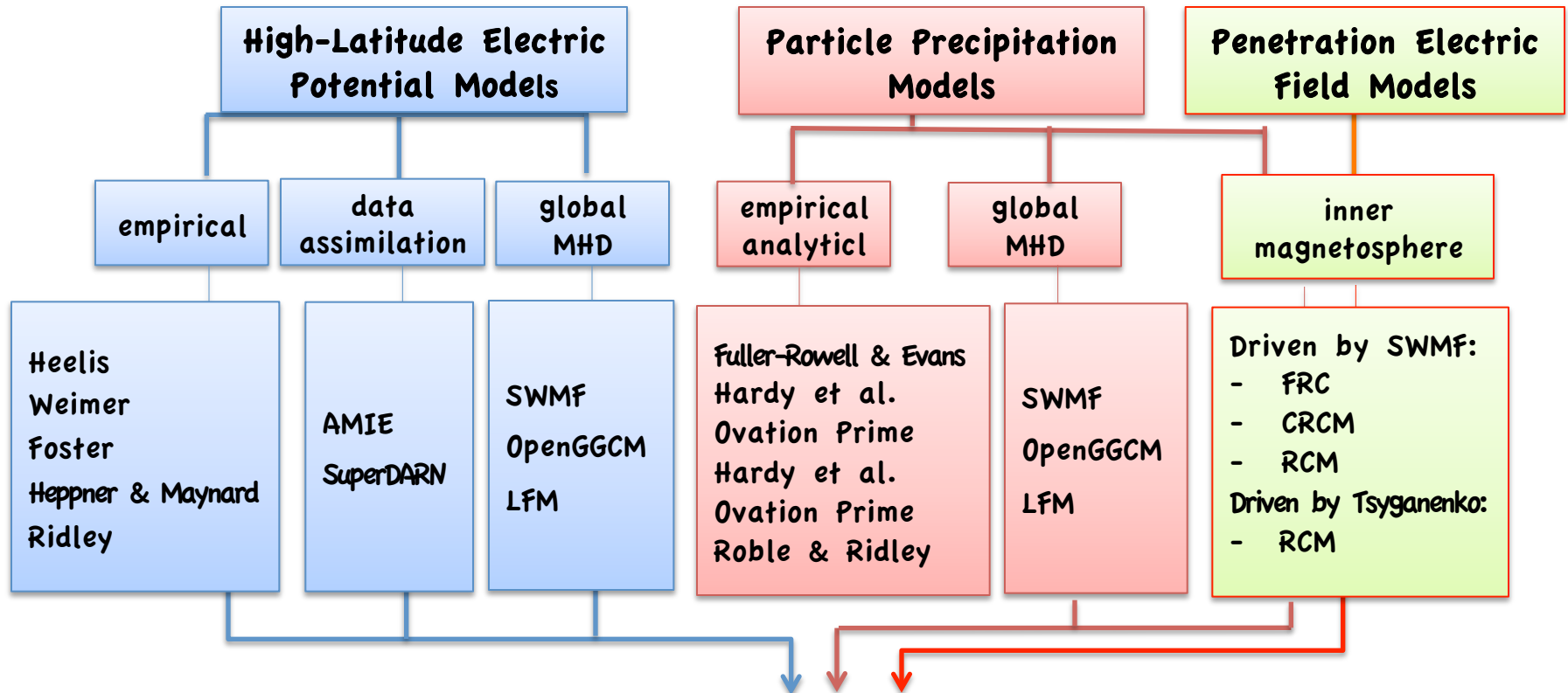
**Process 6: Onset/timing/evolution of neutral composition change**

Process 7: Ionospheric negative storm phase at mid latitude



# Collaborative Development with Model Owners

## Driver Swapping (MI Coupling) Patch-Panel Tool



All drivers are converted to a common format.  
The tool is called as a **KAMELEON** subroutine to provide values on the grid:  
call **kameleon** (model, time, mlts, mlats, variables, values\_output)

IT Models: CTIPe/TIE-GCM/GITM