Community Coordinated Modeling Center

Tools for Swapping
& Repository of Drivers

Ja Soon Shim,

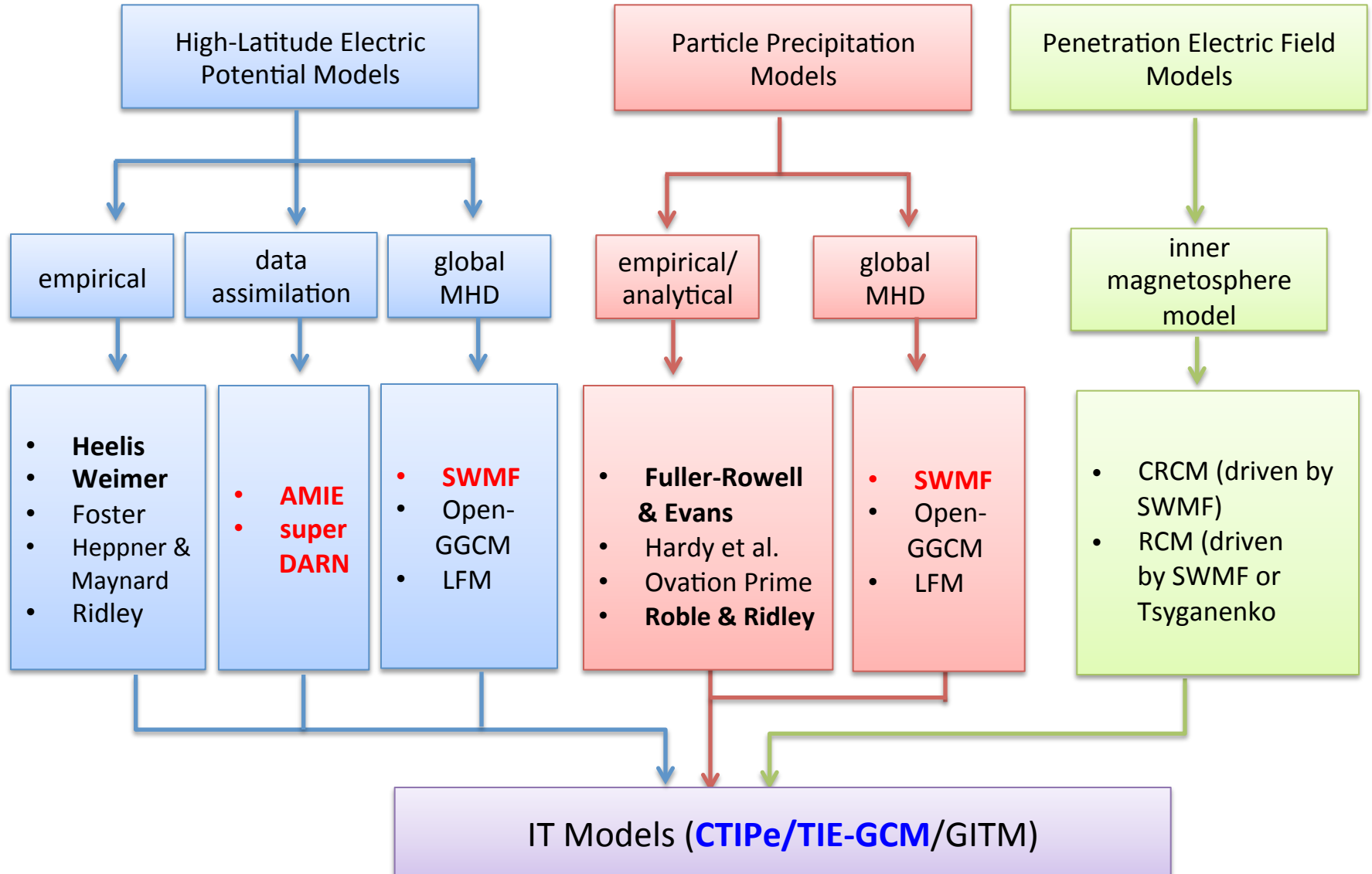Masha Kuznetsova,

Marshall Swindell,

and CCMC team

http://ccmc.gsfc.nasa.gov

NASA Goddard Space Flight Center

Tools for Swapping Drivers

- ## Kameleon-converter:

  convert outputs of any ionosphere electrodynamics models (including ionospheric electrodynamics outputs from global MHD models, AMIE, Weimer, etc.) into the same format (cdf)

- ## Kameleon-interpolator:

  can be called as a subroutine from any code to provide values on the grid (tested with CTIPe and TIE-GCM, and will be implemented for GITM)

MI Coupling:
Driver-Swapping Community Tool

High-Latitude Electric Potential Models	Particle Precipitation Models	Penetration Electric Field Models

High-Latitude Electric Potential Models

- empirical
- data assimilation
- global MHD

empirical
- **Heelis**
- **Weimer**
- Foster
- Heppner & Maynard
- Ridley

data assimilation
- **AMIE**
- **super DARN**

global MHD
- **SWMF**
- Open-GGCM
- LFM

Particle Precipitation Models

- empirical/ analytical
- global MHD

empirical/analytical
- **Fuller-Rowell & Evans**
- Hardy et al.
- Ovation Prime
- **Roble & Ridley**

global MHD
- **SWMF**
- Open-GGCM
- LFM

Penetration Electric Field Models

- inner magnetosphere model

inner magnetosphere model
- CRCM (driven by SWMF)
- RCM (driven by SWMF or Tsyganenko)

IT Models (**CTIPe/TIE-GCM**/GITM)

Repository of Drivers

- Current Status:
  ftp://hanna.ccmc.gsfc.nasa.gov/pub/GEM-CEDAR/out/high-latitude-drivers/

  - Models:
    - SWMF
    - AMIE: Aaron Ridley (UM), Geoff Crowley (ASTRA)
    - superDARN Assimilative Mapping (SAM): Ellen Cousins (UCAR), Simon Shepherd (Dartmouth)

  - Events:
    - E.2006.347 : 12/13-12/15/2006
    - E.2001.243 : 08/31-09/01/2001 (only for SWMF)

  - Data frequency:
    - 5 min: SWMF, AMIE
    - 10 min: superDARN

- New additions
  - CMIT, Weimer05
  - More events or continuous runs?