

Providing Models to the Community via the CCMC: PSI Perspective (Jon Linker, CEO, Predictive Science Inc.)

- PSI (SAIC, prior to 2008) has had a long and productive relationship with the CCMC, sharing solar/heliospheric models
- Apart from CCMC, PSI provides MHD models for every CR on our website (www.predsci.com) going back to 1975 (CR1933)
- CCMC provides ability for user experimentation with parameters, boundary conditions (e.g. different observatories).
- This becomes more important for more advanced models
- Lessons Learned:
 - Delivered models must be robust - usually not most state-of-the-art
 - Early paradigm: model developers help CCMC install on CCMC Computers
 - A key challenge has been CCMC resources (computational & personnel time)
 - Limited computer power: Developers don't run their own models at CCMC
 - Decreases incentives, increase difficulties for providing updated model versions
 - Limited CCMC personnel time has increased time for delivered models to come on line at CCMC

PSI Perspective (Continued)

- We anticipate that NASA AWS & HEC resources will improve the situation
- Advanced models may require intuitive, interactive, interfaces best created by model developers (example: Solar Eruption Models)
- Model Delivery: Interface & Modeling Software
 - Interface package: Creates parameters, files necessary for a model run (tarball).
 - Model software package (e.g. MAS/CORHEL, EPREM/EMMREM)
- Interface installed on NASA AWS (containerization is helpful)
- Model run uses tarball created by interface - model can be run anywhere it is installed (e.g. NASA AWS (GPUs) or NASA Pleiades)
- Some growing pains so far.
- Installation greatly facilitated when developer provided sudo access
- Above paradigm reduces CCMC personnel time.
- This approach should make updating with new versions more straightforward (e.g. provide new container)