Theory Interest Group

http://wiki.ivoa.net/twiki/bin/view/IVOA/IvoaTheory

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IVOA Slack: #theory-ig

Charter

The IVOA Theory Interest Group will:

- Provide a forum for discussing theory specific issues in a VO context.
- Contribute to other IVOA working groups to ensure that theory specific requirements are included.
- Incorporate standard approaches defined in these groups when designing and implementing services on theoretical archives.
- Define standard services relevant for theoretical archives.
- Promote development of services for comparing theoretical results to observations and vice versa.
- Define relevant milestones and assign specific tasks to interested parties.

Why theory interest group?

- Theory needs special attention – it supports *all* astrophysics
- Hard to standardize simulations
  - Observational standards do not (necessarily) apply
- Heterogeneity of data products
  - not just photons at time *T* from direction *V* with energy *E* and polarization *P*
- No common sky
  - what to query?
- No common objects
  - what to compare, cross-match?

Theory Interest Group

- Represents theorists to IVOA
- Represents IVOA to theorists
- 2 standards:
  - Simulation Data Model (SimDM):
    - With a registry for simulation products
  - Simulation Data Access Layer (SimDAL)
    - https://ivoa.net/documents/SimDAL/20170320/index.html
    - Discovery and retrieval of simulation products
- Fair to say not much take up of either standard

This interop: Mini workshop with GWS *Cosmological Simulations on Science Platforms*

- How can science platforms help in disseminating cosmological simulations
  - Focus on largest, hardest to retrieve, data products
- 3 sessions: 13:30 UTC on Tue, Wed, Thu
  - https://wiki.ivoa.net/twiki/bin/view/IVOA/InterOpMay2021SPW
- 1st,2nd: talks by providers from the community
  - Examples and use cases for publishing simulations on science platforms
  - Examples of dissemination of big simulations and codes
- 3rd: towards interoperability and discussion on next steps
    - What can interoperability mean for simulations on science platforms?
    - E.g. Standard framework for publishing (python) libraries for accessing specific simulations (ala astroquery)
- Proposal: Follow up workshop before next interop.