

Theory Interest Group

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

Simon O'Toole, Gerard Lemson

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.