

# Theoretical data access: the users' perspective

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# Summary

I. Why this talk

II. VO Theory users and providers

III. The many uses of theoretical data

IV. How-To for theoretical services implementation?

V. Conclusions

# I. Why this talk

1. Feedback provided from scientist in different workshops and discussion with them about their vision of the VO and their science requirements.
2. Increasing interest by scientists to provide their results in the VO environment: small groups with minimal funds that would like provide their models in the VO (e.j.: Leo Girardi with Padova tracks; Alex Vazdekis and their SSP models...).
3. Different visions about theoretical data use among scientists.

# II. VO Theory users and providers

1. In general in IVOA is assumed that data centres and scientists are different groups, which is correct in the case of observations, but not for standard theory research where

**data provider = scientist = user**

2. There is also other data users, like other scientists, VO applications or scientist-made tools, ... but ...

3. ... in most of the theory cases (except big projects) if the very scientists do not make the implementation this data will not be in the VO (tracks/ isochrones, atmosphere libraries, photoionization grids, synthesis models...)

# III. The many uses of theoretical data

In general, scientists are interested in the VO in two different aspects:

- **Generic data access** (including theoretical data) in a simple way and in a common “format” (e.g. VOSpec, Vizier...)
- Use of particular **science-driven applications** (e.g. VOSA for color-magnitude diagram analysis)

# III. The many uses of theoretical data

Simple first-approach to analysis

Q: “I just want to compare my observation with the result of different theoretical models”

A: “*If you would access* the models with any VO application you can make it very easy (but not all applications have this functionality and there is no theoretical service specification)”

# III. The many uses of theoretical data

Global access to collections

(The most common case with people I have talked about)

Q: “When I want use different atmosphere libraries each one has its own format, so I lost a lot of time to make a program of each case before I can use it in the programs I use for analysis”

A: “You can access the libraries in the VO and use some VO tools (like TopCat) to export all them to a common format you can use in your (non-VO) code”

# III. The many uses of theoretical data

Use theoretical data for analysis tools

Q: “I would like to obtain physical parameters from my data (or at least to have a first idea of the possible range of physical parameters that the data is compatible with)

A: “It depends on the physical process your are interested in. There is no generic tool, but we can work together and if you know the physics and how to do it we can try a VO implementation.”



# IV. How-To for theoretical services implementation?

At this moment there is almost no HowTo for theoretical service implementation (only few cases). In fact there is very few documentation about in the IVOA wiki area (even for some of the ongoing projects).

Are our “ideas” about how to make theoretical access representative of the constrains of the final “real” data providers? (I think NOT most of the time)

Do we have a real vision of the possible theoretical services that the scientific community needs? Is it correct to wait to scientists approach us for consider their theoretical needs? or must we approach them (even if they are not VO aware)?

Would be theoretical data providers involved in the VO if they have an extensive highly technical documentation?

# V. Conclusions/Proposals

1. Try to keep service requirements **easy and simple** so a single scientist (not technical) can understand and implement it.
2. Create **How-to's** and improve documentation (e.j. wiki pages and documents) for **scientifics** (and not only specialised VO-people) would understand it!
3. Meantime: **national contacts** would **increase their implication** in look for and advising of theoretical data providers ?