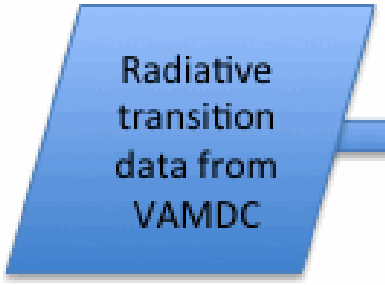
A VAMDC Processor for SME

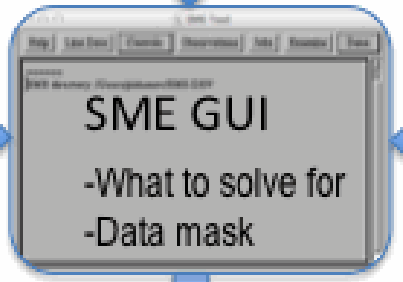
Thomas Marquart

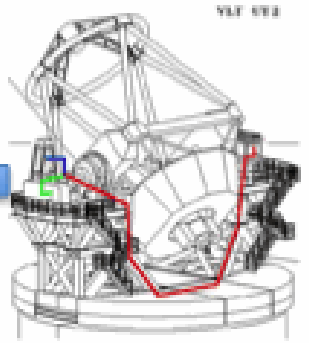
Uppsala University

Python NodeSoftware
VAMDC-node for VALD

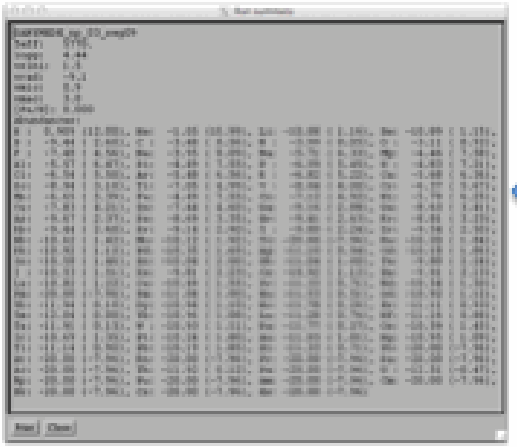
Spectroscopy
Made
Easy

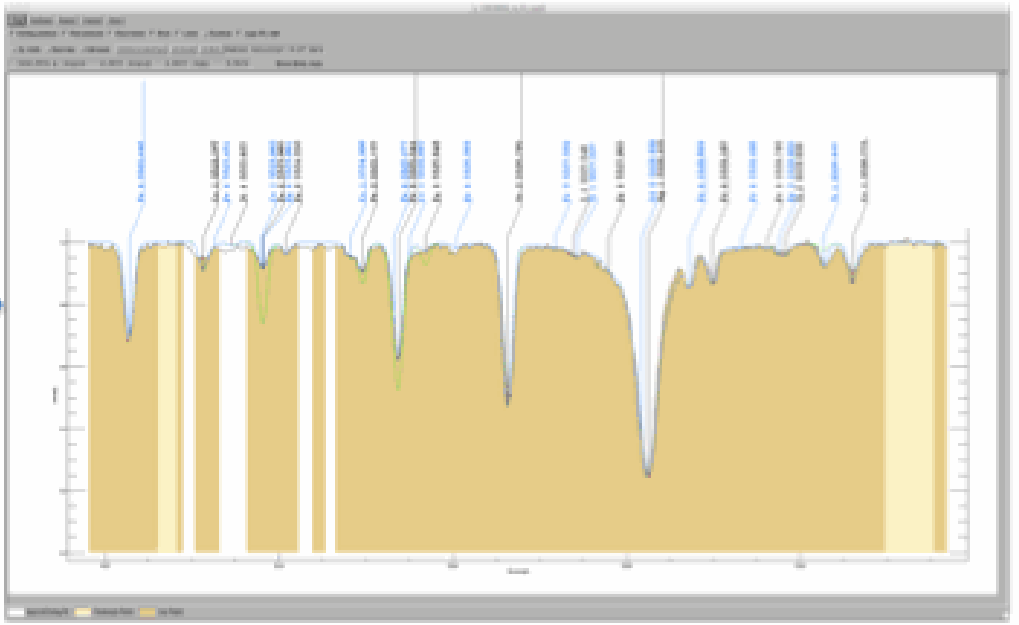






Observations





How to get VAMDC/XSAMS data into SME?

1. Make SME understand XSAMS

2. Put the data out of XSAMS into the native input format for SME.

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Offer the conversion publicly as a VAMDC Processor service.

```
▼<RadiativeTransition id="Pvald-R214973211" process="excitation">
 ▼<EnergyWavelength>
  ▼<Wavelength>
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 ▼<Probability>
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   </Log10WeightedOscillatorStrength>
  </Probability>
 ▼<Broadening name="natural" envRef="Evald-natural">
    <Comments>Natural Broadening</Comments>
    <SourceRef>Bvald-K09</SourceRef>
   ▼<Lineshape name="lorentzian">
    ▼<LineshapeParameter name="log(gamma)">
       <Value units="cm3/s">8.88</Value>
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 ▼<Broadening name="pressure-neutral" envRef="Evald-waals">
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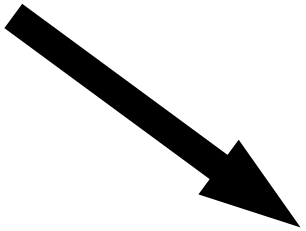


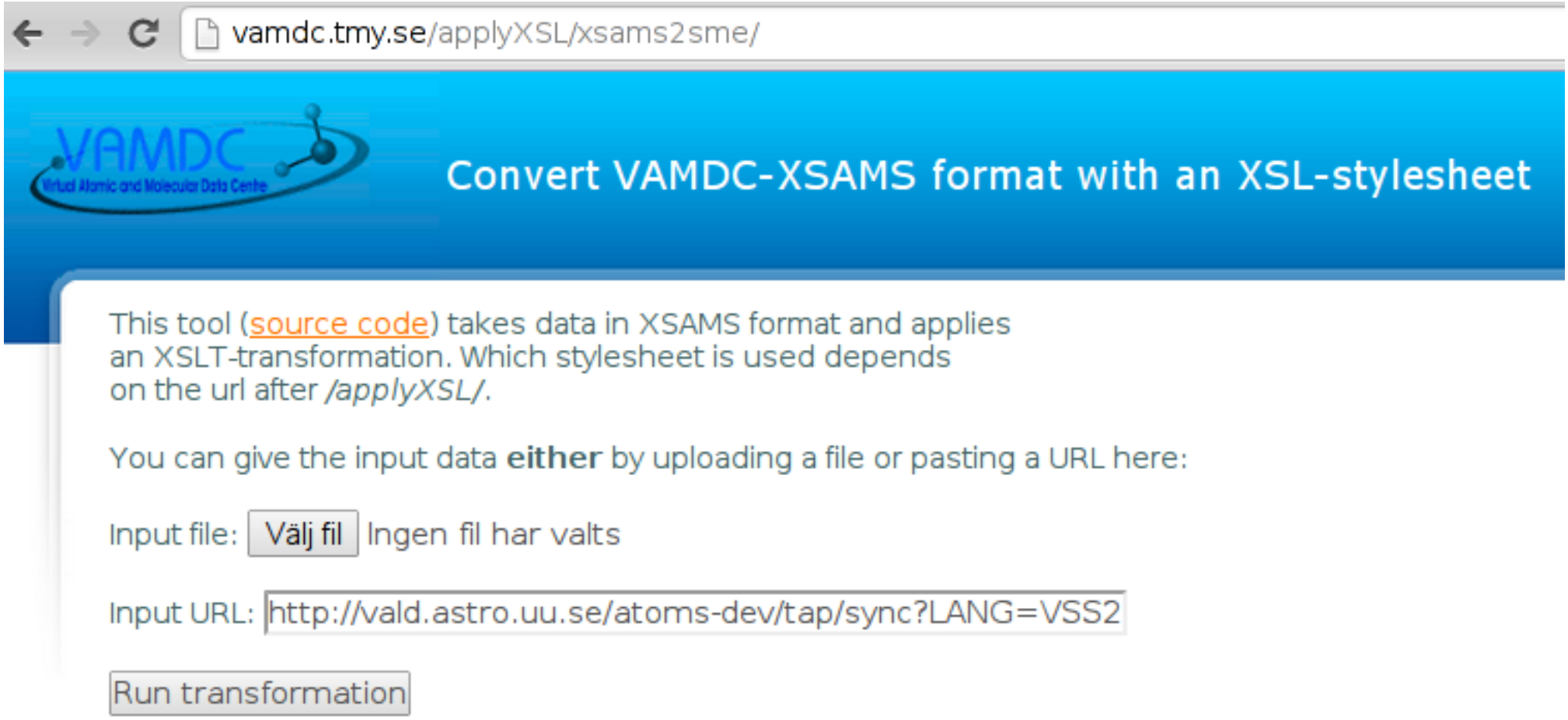
```
4000.0003, 4000.0094, 74,Wavelength region, lines selected, lines processed, Vmicro
                                          Damping parameters   Lande Central
Spec Ion   WL(A)  Excit(eV) Vmic log(gf) Rad. Stark Waals  factor depth   Reference
'Ni 7', 4000.0003, 115.6563, 0.0, -3.182,09.800,-5.300,-7.710, 0.000, 0.000, ''
'Fe 1', 4000.0003, 07.7043, 0.0, -6.381,07.640,-2.390,-6.790, 0.000, 0.000, ''
'Ni 4', 4000.0006, 52.0674, 0.0, -0.874,09.280,-4.700,-7.270, 0.000, 0.000, ''
'Mn 3', 4000.0006, 31.6258, 0.0, -5.507,08.630,-3.760,-7.100, 0.000, 0.000, ''
'Cr 1', 4000.0006, 04.4474, 0.0, -0.223,08.300,-5.860,-7.720, 0.000, 0.000, ''
'Ni 5', 4000.0006, 67.8414, 0.0, -4.824,09.780,-5.600,-7.740, 0.000, 0.000, ''
'Sc 6', 4000.0008, 99.7488, 0.0, -3.312,10.730,-5.570,-7.530, 0.000, 0.000, ''
'Ti 1', 4000.0010, 05.4431, 0.0, -6.983,08.060,-4.230,-7.150, 0.000, 0.000, ''
'Fe 1', 4000.0013, 07.6987, 0.0, -5.863,07.680,-2.630,-6.710, 0.000, 0.000, ''
'Mn 1', 4000.0013, 05.8530, 0.0, -5.172,07.970,-3.750,-7.100, 0.000, 0.000, ''
'Fe 4', 4000.0014, 52.5231, 0.0, -2.208,09.660,-4.540,-7.310, 0.000, 0.000, ''
```

Choice for executing the transformation:

Stylesheet (XSLT)

Hosting XSLTs as VAMDC Processor services

- Standard service with the usual API and web form.
- Offers transformations with different stylesheets at differnent URL endpoints.
  - Split hosting from the transformation rules.
  - Turn any XSL-file into a Processor service without additional work.


vamdc.tmy.se/applyXSL/xsams2sme/
VAMDC
Virtual Atomic and Molecular Data Centre
Convert VAMDC-XSAMS format with an XSL-stylesheet
This tool (source code) takes data in XSAMS format and applies an XSLT-transformation. Which stylesheet is used depends on the url after /applyXSL/.
You can give the input data either by uploading a file or pasting a URL here:
Input file:
Välj fil
Ingen fil har valts
Input URL:
http://vald.astro.uu.se/atoms-dev/tap/sync?LANG=VSS2
Run transformation

Keeping things modular.

Each step accessible through a user interface
or
Automating the steps, e.g. as a Taverna workflow.