Implementing SLAP and VAMDC in SPLAT

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SPLAT-VO

- SPLAT-VO is a graphical tool for analysing astronomical spectra, supports SSAP and ObsCore
- Originally: User can display pre-recorded line identifiers
- Would be nice to have more flexibility, by using SLAP or/and VAMDC
First step: SLAP implementation

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First step: SLAP implementation

- Searching for SLAP services in the Registry:
  - At first: Only two services found, only one working (TOSS)
  - Now: three services found, two working, one known working service not in Registry (splatalogue)
VAMDC implementation

- Using VAMDC provided external libraries
- Challenge: VAMDC provides a lot of information - what is useful?
- restrict to Atoms, radiative transitions
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  - Keep it simple as SLAP
  - Same GUI for query parameters as SLAP
  - returns parameters that are present in SSLDM
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  - returns parameters that are present in SSLDM
  - Using VAMDC provided external libraries
- Difficult to map information from one data model to the other
## list of SSLDM parameters that have been mapped

<table>
<thead>
<tr>
<th>Name</th>
<th>SSLDM Utype</th>
<th>VAMDC</th>
</tr>
</thead>
<tbody>
<tr>
<td>title</td>
<td>ssldm:line.title</td>
<td>- (created)</td>
</tr>
<tr>
<td>element</td>
<td>ssldm:line.species</td>
<td>ElementSymbol</td>
</tr>
<tr>
<td>wavelength</td>
<td>ssldm:line.wavelength.value</td>
<td>EnergyWavelength</td>
</tr>
<tr>
<td>air wavelength</td>
<td>ssldm:line.airWavelength.value</td>
<td>EnergyWavelength</td>
</tr>
<tr>
<td>initial energy</td>
<td>ssldm:line.initialLevel.energy.value</td>
<td>(AtomicState) IonizationEnergy</td>
</tr>
<tr>
<td>final energy</td>
<td>ssldm:line.finalLevel.energy.value</td>
<td>(AtomicState) IonizationEnergy</td>
</tr>
<tr>
<td>stage</td>
<td>-</td>
<td>IonCharge</td>
</tr>
<tr>
<td>einsteinA</td>
<td>ssldm:line.einsteinA.value</td>
<td>TransitionProbabilityA</td>
</tr>
<tr>
<td>Initial level</td>
<td>ssldm:line.initialLevel</td>
<td>(AtomicState) Description</td>
</tr>
<tr>
<td>final level</td>
<td>ssldm:line.finalLevel</td>
<td>(AtomicState) Description</td>
</tr>
<tr>
<td>oscillator strength</td>
<td>ssldm:line.oscillatorStrength</td>
<td>ProbabilityOscillatorStrength</td>
</tr>
<tr>
<td>weighted oscillator strength</td>
<td>ssldm:line.weightedOscillatorStrength</td>
<td>ProbabilityWeightedOscillatorStrength</td>
</tr>
</tbody>
</table>

▶ information not always present
SSLDM Data Models

- Proposal in DAL for updating SSLDM
- better definition of Species (right now only a human readable String like H II)
- introduction of Ionisation stage/Ion Charge in SSLDM
- ...
Where to get it

- Beta version of SPLAT-VO with SLAP and VAMDC can be retrieved at [http://www.g-vo.org/pmwiki/About/SPLAT](http://www.g-vo.org/pmwiki/About/SPLAT)
- functionality will be expanded