INTERNATIONAL VIRTUAL OBSERVATORY ALLIANCE
US National Virtual Observatory

SED Data Model Intro/Issues

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SED Data Model

- **Uniform SED**
  - Uniform view of photometric data points from multiple observations
  - Like a spectrum, but with additional metadata
  - Rebinned SED is a special case of a uniform SED

- **Aggregate SED**
  - A set of "segments", one for each observation
  - Used by a SED builder tool to build the overall/uniform SED

- **Real World**
  - NED SED (VAO use case) is only available as a uniform SED
  - Data points may be derived from publications

Architecture

- **Spectrophotometric Data**
    - SED, Spectrum, TimeSeries are closely related
    - Top level Dataset classes in DAL
    - Top level objects in ObsTAP (dataproduct_type)
    - Separate access protocols but common data model?

- **Data models**
    - Spectrum data model is the core
    - SED model uses Spectrum for "segments" (observations)
        - Uniform SED is a type of segment
        - Can be viewed as a Spectrum instance
    - SED, TimeSeries (incl. photometry point) extend the Spectrum model
        - Note all can be present in a SED instance

Namespace/Utype Issues

- **Data model hierarchy**
  - SED and TS extend Spectrum, add additional structure, metadata
  - How do we represent this?
  - In other words what are the namespaces and Utypes?

- **Current proposal**
  - All Dataset Utypes use "spec:Spectrum.*"
  - Alternative would be a separate namespace for SED, TS
    - e.g., "sed:" and "ts:" namespaces
  - Dataset types are SED, Spectrum, TimeSeries
    - but core model is essentially the same ("Spectrum" currently)