

~~DM~~ for population synthesis XML schema

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• Motivation:

- Standardize synthesis models results to be ingested in Star Formation History codes
- (VO motivation) Take advantage of the effort to produce a ~~DM~~ XML-schema for the involved ~~models~~ simulations



- The physical problem (Observation)
- Observed flux of a galaxy/estellar cluster

$$L_{\text{tot}}(\lambda) = \sum_{i=1}^N \ell_i^*(\lambda) g_i(\lambda) \approx \sum_{j \gg 1}^N \ell_j^*(\lambda) g_j(\lambda)$$

$$\ell_i^*(\lambda) g_i(\lambda) < \ell_{i+1}^*(\lambda) g_{i+1}(\lambda)$$

Observations are luminosity-weighted quantities



- The physical problem (theoretical approach)
- Model flux of a galaxy/stellar cluster by means of theoretical “building blocks” (classes) + environment

$$L_{\text{tot}}(\lambda) = G(\lambda) \sum_k^{N_{\text{class}}} a_k l_k^{\text{class}}(\lambda)$$

- Obtain the contribution of each class



- The physical problem (VO approach)
 - Obtain a DM/XML-schema (see Frank Le Petit talk on PDRDB) for each possible building block/class in the problem
 - Implies:
 - DM/XML-schema for each class/building block element
 - DM/XML-schema for the group of classes



SimDM study and DM/XML schema and produced for:

- Classes and groups (building blocks)
 - Galaxy template/Galaxy template library
 - Cluster/Cluster library
 - Stars/stellar library
 - Synthesis model/synthesis model library
- Star Formation Histories



In the future:

- Included stellar evolution
 - Tracks
 - Isochrones
- Include CMD
- Include Chemical evolution



Current status:

- Elaboration of a draft to discuss and distribute in a large list of stellar libraries and synthesis model producers (looking for consensus in scientist community)
- Possible refereed paper (it is a science driven project)
- Implementation of the DM in some synthesis models and SFH codes

Collaborations (after first internal draft)
are welcome

Keep tuned!

