



Unified Content Descriptor Current update and tests

SESTO Interoperability Meeting , June 2015

Mireille Louys, Andrea P. Martinez,
Sebastien Derrière, François Ochsenbein

Unified Content Descriptor : List update

New WD issued

<http://www.ivoa.net/documents/UCD1+/20150608/index.html>

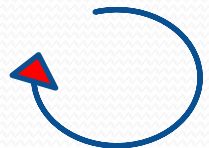
- Inclusion of terms suggested by scientists from planetary and solar astrophysics
- Inclusion of terms for service access
 - `meta.query`
 - `meta.preview`
- `em.line` labels asked for addition require modeling → discussion with VAMDC
- Current revision by the UCD maintenance committee and the Semantics WG

UCD assignator : tuning

Are new terms appropriate and complete?

Test on Solar Data and Planetary Science examples

- Heliophysics data / EuroPlanet
- Test analysis
- Fields from EPN-TAP inherits UCD tags from Obscore : **OK**
- Specific items may have utypes , but no UCD class tag



Iterate to train for better assignation rules and more precise semantic description for data model items

Tests on Vizier catalogues /SUN

VI/138 Sunspot catalogues

? Longitude of the node (src.orbital.node)

J/AJ/149/27/sat (satellites Saturne)

? Value of the parameter z (pos.frame;obs.field)

J/ApJ/760/L12, WISE/NEOWISE Main Belt asteroids

? The 1σ uncertainty in eta (Note 1) (stat.error;phys.electron.degen)

J/ApJ/770/7

? Median proper semi major axis ([pos.pm](#);phys.size.smajAxis;stat.median) => phys.angSize.smajAxis;stat.median

? Median eccentricity (src.orbital.eccentricity) => src.orbital.eccentricity;stat.median

? alpha uncertainty (stat.error;pos.eq.ra) => stat.error

J/ApJ/737/L35 Pulsed Alfvén waves in the solar wind

? Solar wind speed at wave onset (phys.veloc;arith.ratio) => phys.veloc

J/ApJ/710/1111 List of IP shocks observed during solar cycle 23

? Interplanetary shock speed (phys.veloc;arith.ratio) => phys.veloc

? Coronal Mass Ejection white-light date (phys.mass) => time.epoch

? Solar Flare size in soft X-rays (Note 5)

(src.morph.scLength) => phys.angSize;em.X-ray

Feedback on assignator failiure

→ Unprecise or verbose or ambiguous description in the model

→ Uncomplete list of UCD terms

- Sun Active Regions (AR)

- Need for a coordinate definition on the Sun surface

- → pos.heliographics,

- pos.heliographics.lon, pos.heliographics.lat

- → pos.carrington

- pos.carrington.lon, pos.carrington.lat,

- meta.number; time.period.rotation (= carrington number)

- Sun spot number

- Wolf nb : index relative to the number of sunspots

Stabilise the set of physical parameters regularly used for helio physics for new UCDs

Utype vs UCD ?

- Confusion : Measurement type vs datamodel item
- ID="feat_max_bz" name="feat_max_bz"
ucd="Wave.WaveQuantity.MagneticField;Qualifier.LineOfSight;stat.max"
utype="feature.max_bz.bz_magnetic_field_gauss" | AR max. line-of-sight
magnetic field value in Gauss | => ucd1+:phys.magField;stat.value |
- Should/could we also ingest the utype in the description for the assignment?

New terms asked for uncovered physical quantities

- From bibliographic citations databases
 - Enthalpy [$H=U+pv$]
 - Free Enthalpy (or Gibbs free energy) [$H-TS$]
 - Helmholtz free energy [$U-TS$]
- Send request to the UCD maintenance group or email to Semantics' chair or vice chair.