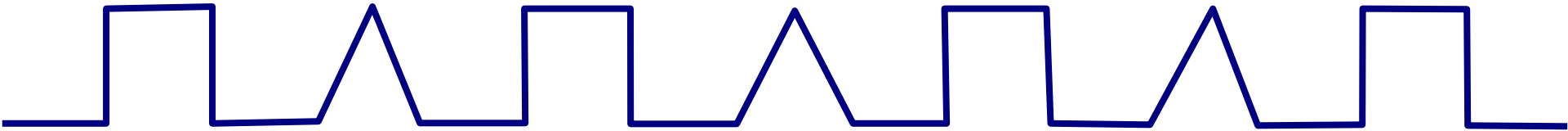


A brief survey of potentially useful data representation standards



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CF NetCDF

Commonly used

NetCDF-U conventions show promise for
probabilistic forecasts

CF names can mix physical quantities and post-
processing methods



Recent WMO Aviation XML Standards

IWXXM (XML for METAR, SPECI, TAF, SIGMET)

OPM (Observable Properties Model)

<https://en.wikipedia.org/wiki/IWXXM>



Practices from IWXXM development

Re-use of WMO-defined and maintained types,
where practical

Use of ISO 19156, Observations and
Measurements, where practical

Use of external, machine-readable
code registry (<http://codes.wmo.int/>)



Code Registry screen shot

Register: w'w'

URI: <http://codes.wmo.int/306/4678>

This register provides terms that may be used to describe significant [recent], present and forecast weather - enumerating the set of meteorologically valid options defined in WMO No. 306 Vol 1 code-table 4678. Each term comprises one or more of the elements from code-table 4678: 'intensity or proximity', 'descriptor', 'precipitation', 'obscuration' and 'other'.

[Core metadata](#)

[Reg metadata](#)

[All properties](#)

[Download](#)

Contents

Show entries

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Name	Notation	Description	Types	Status
Light precipitation of rain, snow and drizzle	-RASNDZ		Concept	stable
Light precipitation of rain, snow and ice pellets	-RASNPL		Concept	stable
Light precipitation of rain, snow and snow grains	-RASNSG		Concept	stable
Light precipitation of rain, snow grains and drizzle	-RASGDZ		Concept	stable
Light precipitation of rain, snow grains and snow	-RASGSN		Concept	stable

Code Registry in CSV

```
<http://codes.wmo.int/306/4678/-RASNDZ>,skos:Concept,  
  "'Light precipitation of rain, snow and drizzle'@en"  
<http://codes.wmo.int/306/4678/-RASNPL>,skos:Concept,  
  "'Light precipitation of rain, snow and ice  
  pellets'@en"  
<http://codes.wmo.int/306/4678/-RASNSG>,skos:Concept,  
  "'Light precipitation of rain, snow and snow  
  grains'@en"  
<http://codes.wmo.int/306/4678/-SG>,skos:Concept,  
  'Light precipitation of snow grains'@en  
<http://codes.wmo.int/306/4678/-SGDZ>,skos:Concept,  
  'Light precipitation of snow grains and drizzle'@en
```

Earth Science Markup Language

External XML file that describes encoding details
of accompanying data file

<http://projects.itsc.uah.edu/esml/>



Uncertainty Markup Language

Generalized XML expressions of probabilistic concepts

<http://www.uncertml.org/>

Uncert  ML

The logo for UncertML features the word "Uncert" in a grey sans-serif font, followed by a blue bell-shaped curve representing a probability density function, and then the letters "ML" in a grey sans-serif font. A horizontal blue line is positioned below the curve and the letters "ML".