Additional Attributes in NASA Climate Data Initiative Metadata

AdditionalAttributeFigure2.png

Metadata Source: NASA Climate Data Initiative

Metadata Dialect: ECHO10

Evaluation Target: Additional Attributes

ECHO additional attributes, also known as Product-Specific Attributes (PSAs), are parameters that are not included in the ECHO metadata standard which further describe the data in each granule within a collection.

ECHO includes a comprehensive model of information related to additional attributes (see list below). As these data are shared across disciplines and users, it is critical that the additional attributes are completely described.

This Quick Evaluation shows the distribution of additional Attribute information in collection metadata for NASA Climate Data Initiative datasets from six DAAC's. The units are elements / record, so a value of 9.48 for LPDAAC means that the LPDAAC metadata records include an average of 9.48 additional attribute names / record. If all of these additional attributes were completely described, the entire column for LPDAAC would have the same value (9.48). We can see that this is not true. In fact, we see a steep falloff in content after DataType in each collection.

Additional Attributes Properties:

Name – Unique name of the additional attribute.

DataType – Data type of the additional attribute, chosen from the supported list of types.

Description – A textual description of the attribute to help end users understand the purpose and data represented by the attribute.

MeasurementResolution – Identifies the smallest unit increment to which the parameter value is measured.

ParameterRangeBegin – Minimum value of all attribute values that will be provided by the collection or granules.

ParameterRangeEnd – Maximum value of all attribute values that will be provided by the collection or granules.

ParameterUnitsOfMeasure – Unit of measure for parameter (e.g. AVHRR: unit of geophysical parameter-units of geophysical parameter.)

ParameterValueAccuracy – Estimate of the accuracy of the assignment of attribute value. This can be specified in percent or the unit with which the parameter is measured.

ValueAccuracyExplanation – Defines the method used for determining the parameter value accuracy.

AdditionalAttributes in the CMR

	Number of Records	**161**	**2559**	**38**	**103**	**23**	**1044**	**19**	**340**	**130**	**6**	**154**	**406**	**606**	**1**	**285**	**5488**	**223**	**784**	**132**	**5**	**1216**	**603**	**202**	**11**	**130**
Element	**Element Path**	**ASF**	**AU_ADC**	**CDDIS**	**ESA**	**EUMETSAT**	**GES_DISC**	**ISRO**	**JAXA**	**LADS**	**LANCEAMSR2**	**LANCEMODIS**	**LARC**	**LARC_ASDC**	**LM_FIRMS**	**LPDAAC_ECS**	**NOAA_NCEI**	**NSIDC_ECS**	**NSIDC V0**	**OB_DAAC**	**OMINRT**	**ORNL_DAAC**	**PODAAC**	**SEDAC**	**USGS_EROS**	**USGS_LTA**
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:dataType/eos:EOS_AdditionalAttributeDataTypeCode		2.29		2.20	2.00	9.28	3.00	3.92	6.38		1.08	1.07		2.00	5.66	2.58	.68	3.18						1.09	3.00
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:description		2.29		2.20	2.00	9.28	3.00	3.92	6.38		1.08	1.07		2.00	5.66	2.58	.68	3.18						1.09	3.00
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:identifier/gmd:code		2.29		2.20	2.00	9.25	3.00	3.92	2.25		.13			2.00	.38	2.58		3.18							3.00
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:name		2.29		2.20	2.00	9.28	3.00	3.92	6.38		1.08	1.07		2.00	5.66	2.58	.68	3.18						1.09	3.00
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:type/eos:EOS_AdditionalAttributeTypeCode		2.29		2.20	2.00	9.28	3.00	3.92	6.38		1.08	1.07		2.00	5.66	2.58	.68	3.18						1.09	3.00
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:value		2.28		2.20	2.00	9.25	3.00	3.92	2.25		.13	.07		2.00	.38	2.58		2.24							3.00
	gmi:acquisitionInformation/gmi:instrument/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:name	2.00											.63			.12		1.08							5.27	
	gmi:acquisitionInformation/gmi:instrument/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:type/eos:EOS_AdditionalAttributeTypeCode	2.00											.63			.12		1.08							5.27	

	gmi:acquisitionInformation/gmi:instrument/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:value	2.00										.63			.09		.27									
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:parameterRangeBegin								.72		.49	.02			.07		.13									
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:parameterRangeEnd								.72		.49	.03			.07		.13									
	gmd:dataQualityInfo/gmd:lineage/gmd:processStep/gmi:processingInformation/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference														1.02		.74									
	gmd:dataQualityInfo/gmd:lineage/gmd:processStep/gmi:processingInformation/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference														1.02		.74									
	gmd:dataQualityInfo/gmd:lineage/gmd:processStep/gmi:processingInformation/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference														1.02		.74									
	gmd:dataQualityInfo/gmd:lineage/gmd:processStep/gmi:processingInformation/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference														1.02		.74									
	gmd:dataQualityInfo/gmd:lineage/gmd:processStep/gmi:processingInformation/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference														1.02		.74									
	gmd:dataQualityInfo/gmd:lineage/gmd:processStep/gmi:processingInformation/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference														1.02		.74									
	gmd:dataQualityInfo/gmd:lineage/gmd:processStep/gmi:processingInformation/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference														1.02		.74									
	gmd:dataQualityInfo/gmd:lineage/gmd:processStep/gmi:processingInformation/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference														1.02		.74									
	gmd:dataQualityInfo/gmd:report/gmd:result/gmd:value/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:dataType														.70		.04							2.00		
	gmd:dataQualityInfo/gmd:report/gmd:result/gmd:value/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:dataType														.70		.04							2.00		
	gmd:dataQualityInfo/gmd:report/gmd:result/gmd:value/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:dataType														.70		.04							2.00		
	gmd:dataQualityInfo/gmd:report/gmd:result/gmd:value/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:description														.70		.04							2.00		
	gmd:dataQualityInfo/gmd:report/gmd:result/gmd:value/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:name														.70		.04							2.00		
	gmd:dataQualityInfo/gmd:report/gmd:result/gmd:value/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:type														.70		.04							2.00		
	gmd:dataQualityInfo/gmd:report/gmd:result/gmd:value/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:type														.70		.04							2.00		
	gmd:dataQualityInfo/gmd:report/gmd:result/gmd:value/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:type														.70		.04							2.00		
	gmi:acquisitionInformation/gmi:instrument/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:dataType/eos:EOS_AdditionalAttributeDataTypeCode											.10			.03		1.08							5.27		
	gmi:acquisitionInformation/gmi:instrument/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:description											.10			.03		1.08							5.27		
	gmi:acquisitionInformation/gmi:instrument/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:parameterUnitsOfMeasure											.10					.54									
	gmi:acquisitionInformation/gmi:platform/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:dataType/eos:EOS_AdditionalAttributeDataTypeCode								.70		.53	.33			1.20		.55							2.00		
	gmi:acquisitionInformation/gmi:platform/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:description								.70		.53	.33			1.20		.55							2.00		
	gmi:acquisitionInformation/gmi:platform/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:name								.70		.53	.82			1.20		1.29							2.00		
	gmi:acquisitionInformation/gmi:platform/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:parameterUnitsOfMeasure								.70		.53	.33			1.20		.55							2.00		
	gmi:acquisitionInformation/gmi:platform/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:type/eos:EOS_AdditionalAttributeTypeCode								.70		.53	.82			1.20		1.29							2.00		
	gmi:acquisitionInformation/gmi:platform/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:value								.70		.53	.82			1.20		1.29							2.00		
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:measurementResolution																.13									
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:parameterUnitsOfMeasure																.13									
	gmd:contentInfo/gmd:dimension/gmd:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:parameterValueAccuracy																.13									
	gmd:dataQualityInfo/gmd:lineage/gmd:processStep/gmi:processingInformation/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference																.04									
	gmd:dataQualityInfo/gmd:lineage/gmd:processStep/gmi:processingInformation/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference																.19									
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	gmi:acquisitionInformation/gmi:instrument/eos:otherProperty/gco:Record/eos:AdditionalAttributes/eos:AdditionalAttribute/eos:reference/eos:parameterRangeEnd																.27								
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