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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 30170.2-2016

**Geographic information -- Spatial referencing by coordinates --
Part 2: Extension for parametric values**

地理信息 基于坐标的空间参照 第2部分：参数值扩展

(English Translation)

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Foreword

This part is Part 2 of GB/T 30170-2013, "Spatial Reference for Geographic Information Based on Coordinates". This part can be made separately Use, but also with GB/T 30170-2013 supporting the use of.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part uses the translation method equivalent to ISO 19111-2:2009 "Geographic information based on the spatial reference of coordinates Part 2. Parameters Value expansion".

This part makes the following editorial changes.

- the use of our legal units of measurement in Appendix B;

--- In Appendix B, the horizontal reference coordinate system in B.4 is replaced by the original standard WGS84 to 2000 national geodetic coordinates (CGCS2000), the ellipsoid name and parameters were adjusted accordingly;

[7] GB/T 17694-2009 Geographic Information Glossary (ISO/T S19104:2008, IDT).

This section is proposed by the National Mapping Geographic Information Service.

This section is under the jurisdiction of the National Geographic Information Standardization Technical Committee (SAC/TC230).

This part of the drafting unit. China Institute of Surveying and Mapping, National Basic Geographic Information Center.

Introduction

GB/T 30170 describes the necessary elements for a complete definition of various types of coordinate-based spatial reference systems. In GB/T 30170, the position of a point is defined by n scalar values, and one coordinate is one of the scalar values. GB/T 30170 allows the coordinates to be angular values (Such as longitude and latitude) or linear values (such as east distance, north distance). GB/T 30170 also introduces the concept of composite coordinate reference system.

The composite coordinate reference system uses at least two independent coordinate reference systems to describe a three-dimensional spatial position.

The scientific community, especially those involved in environmental science, often expresses spatial locations in the form of parameters or functions. In these areas, this parameter or function is often treated as a coordinate, and its relationship with a dimension of space is usually non-linear. This kind of example is very many, but longitude, latitude and pressure are often used.

This part is used as an extension to GB/T 30170-2013 to define the parametric coordinate parameters using the concepts in ISO/IEC 3170-2013. According to the photo, these terms of GB/T 30170 are used to include a parametric coordinate reference system as part of a composite coordinate reference system.

As an option, the time can also be used as one or more additional axes.

Geographic information is based on spatial reference of coordinates Part 2. Parameter value expansion

1 Scope

This part, as an extension to GB/T 30170-2013, specifies a conceptual model that describes spatial references with parameter values or functions.

It uses the model of GB/T 30170-2013 to combine a position in coordinates with a parameter value to form a space-Parameter coordinate reference system (CRS). The space-parameter coordinate reference system can be extended to include time.

This section applies to manufacturers and users in the field of environmental information.

Those that are attributes of a spatial location or feature but are independent of the spatial reference are not included in this section.

2 Consistency requirements

Any coordinate reference system that claims to comply with this part shall meet the requirements of Appendix A.

3 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated edition applies to this article. For undated references, the latest edition (including all modifications) applies to this document.

GB/T 30170-2013 Geographic information Spatial reference based on coordinates (ISO 19111:2007, IDT)

4 Terms and definitions

The following definitions and definitions as defined in GB/T 30170-2013 apply to this document.

Parametric coordinate system the coordinate unit is a one-dimensional coordinate system of parameter values that do not have spatial properties.

Parametric coordinate reference system Coordinate reference system based on a parameter reference.

Parameter reference parametric datum A reference to the relationship between the coordinate system and the object.

Note: This object usually refers to the earth.

Space - parameter coordinate reference system

spatio-parametric coordinate reference system A composite coordinate reference system consisting of a parametric coordinate reference system and a spatial coordinate reference system.

Note: Normally, the space component is used for "horizontal direction" and the parameter component is used for "vertical direction".

Space - parameter - time coordinate reference system

spatio-parametric-temporal coordinate reference system A composite coordinate system based on spatial coordinate reference system, parametric coordinate reference system and time coordinate reference system.