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**Technical requirements of space objects orbit determination
and prediction**

空间物体轨道确定和预报技术要求

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents.

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Technical requirements for orbit determination and prediction of space objects

1 Scope

This document specifies the main force models, inputs and outputs, and technical procedures for orbit determination and prediction of space objects orbiting the Earth.

This document applies to the orbital data of space objects involved in the measurement, cataloguing and early warning of space objects moving around the Earth under the influence of natural forces.

Generation, orbital motion state prediction and its applications.

2 Normative references

GB/T 45621

3 Terms and definitions

The terms and definitions defined in GB/T 45621 and the following apply to this document.

3.1 Examination Department

The Earth's mass center is taken as the origin, the mean equator of epoch J2000.0 is taken as the XY plane, and the mean vernal equinox of epoch J2000.0 is taken as the right-hand reference of the X-axis.

3.2

The right-handed reference frame is defined by the International Astronomical Union (IAU) Resolution B1.3 in 2000, with the Earth's center of mass as the origin.

Note. The GCRS coordinate axis points close to the J2000.0 reference system, with a difference of about 0.02".

3.3

The parameters of the orbital motion state of a space object are the position and velocity vectors of the space object or the parameters that can be equivalently converted into position and velocity vectors.

Indicates that in orbit determination, orbital motion parameters can also include orbital dynamics model parameters.

Note. The orbital dynamics model parameters include the atmospheric drag coefficient, solar light pressure coefficient, etc.

3.4

Measurement data that directly or indirectly reflects the orbital motion state of a space object.

Note. Track measurement data include angle measurement, distance measurement, speed measurement, three-dimensional position, etc.

3.5 measurement equations

A set of equations that represents the relationship between the orbital measurement data values of a space object and the orbital motion parameters.