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PEOPLE'S REPUBLIC OF CHINA**

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**Technical specification for space radiation biology
experiment-Part 1: General principle**

空间辐射生物学实验技术规范 第1部分：总则

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Foreword

This document complies with the provisions of GB/T 1:1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document is Part 1 of GB/T 43513 "Technical Specifications for Space Radiation Biology Experiments": GB/T 43513 has been released with Lower part:

- Part 1: General principles:

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Introduction

As the manned aerospace project moves from near earth to deep space, the space radiation biology experimental payload has realized on-orbit space radiation measurement, biological Improvements in capabilities such as on-orbit damage monitoring of samples and correlation analysis of radiation parameters and systems biology data are critical to the effective use of these space payloads:

Conducting space radiation biology experiments has put forward new requirements, which mainly include the entire process of space radiation generation before launch, in orbit and after return:

Physics experimental technology:

GB/T 43513 aims to establish the full-process implementation requirements for space radiation biology experimental technology and is planned to be composed of eight parts:

- Part 1: General principles: The purpose is to stipulate the needs analysis, overall implementation requirements and implementation of the entire process of space radiation biology experiments: program:
- Part 2: Screening of biological experimental samples: The aim is to establish screening of biological samples that can be applied to space radiation biology experiments related requirements:
- Part 3: Determination of biological parameters of space radiation: The purpose is to clarify the radiation parameter monitoring required for space radiation biology experiments: measurement indicators:
- Part 4: Special ground testing and verification: The purpose is to carry out space experiment experiments on samples loaded with space radiation biology experiments:

Environmental adaptability analysis establishes experimental and verification requirements and optimizes the environmental conditions of the space radiation biology experimental load:

- Part 5: Biological sample loading: The purpose is to establish an experimental plan and implementation process for space radiation biology sample loading:
- Part 6: On-orbit implementation and monitoring: The purpose is to establish the on-orbit implementation of space radiation biology experiments and on-orbit experimental engineering Relevant requirements for monitoring conditions, environmental parameters, dynamic changes of samples, etc:
- Part 7: Comprehensive guarantee for sample recovery: The purpose is to establish

biological safety and quality assurance such as the recovery and return of biological samples: measure:

- Part 8: Experimental data processing and analysis: The purpose is to establish the biological radiation parameters of space radiation, space on-orbit experiments and And the procedures and requirements for processing and analyzing the systems biology data obtained after the biological experiment samples are returned:

This document is GB/T 43513 Part 1: By supplementing and improving the practice of space radiation biology on the basis of promulgated national standards, It provides the implementation elements of the whole process of experimental technology, provides programmatic technical specifications for the content involved in space radiation biology experiments, and provides guidance for the implementation of space radiation biology experiments:

An outline is provided for physics experiments:

Technical specifications for space radiation biology experiments Part 1: General Provisions

1 Scope

This document stipulates the needs analysis, overall implementation requirements and implementation procedures for the entire process of space radiation biology experiments:

This document is applicable to space radiation biology experiments carried out on different orbiters: Other space biology experiments will be performed accordingly:

2 Normative reference documents

GB/T 28875

GB/T 28877-2012

GB/T 30114

GB/T 31267

GB/T 32870-2016

GB/T 38255

3 Terms and definitions

The terms and definitions defined in GB/T 30114:1 and the following apply to this document: 3:1 A discipline that studies the effects of space radiation on living matter and life phenomena, as well as its damage mechanisms and protection methods:

[Source: GB/T 30114:1-2013, 2:47, with modifications]: 3:2 A specially designed sample

container used to load biological samples and can be installed in a universal biological sample box: 3:3 Used to evaluate the type of radiation particles, energy, absorbed dose, dose equivalent, radiation quality factor, energy transfer linear density, Nuclear track and other parameters: 3:4 In order to study space life science issues, active biological materials such as animals, plants, microorganisms, tissues, cells and biological macromolecules are used as Subjects of space radiation biology experiments:

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