

MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)
Microgravity Sciences Onboard the International Space Station and Beyond - Part 1 (6)

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SCIENTIFIC UTILIZATION PLANNING FOR CHINESE SPACE STATION-ON MICROGRAVITY
SCIENCE

Abstract

Chinese government has already formally approved the program of building up Chinese Space Station(CSS) in 2010, and the scientific utilization planning for the CSS is even earlier. Hundreds of space utilization proposals suggested by more than 70 universities and institutes were received. After CSS Mission Planning Committee's review, nearly 200 research projects are candidate now.

Working with scientists in different fields for more than three years, the science plan in these fields have been preliminary established.

In the field of fluid physics and combustion:

- 1)Microgravity fluid dynamics
- 2)Two-phase flow and fluids management
- 3)Complex fluid

4)Microgravity combustion science

5)Fire prevention, mitigation, and recovery study

In the field of space material science:

1)Space material growth kinetics and mechanism

2)Functional materials, process and research

3)Material causative behavior in the space environment

In the field of fundamental physics:

1)High-precision time-frequency system

2)Cold atom physics

3)Relativity and equivalence principle test

4)Low temperature condensed matter and critical phenomena

In the field of space astronomy:

1)Various sky-surveys aiming at dark energy and other scientific objectives

2)Detection of dark matter particles and cosmic ray

3)Monitoring and detection of all kinds of variable celestial sources and explosions, including the Sun

4)Experiments for new technologies in space astronomy.

Focuses are on space life science, space physics and space environment, and earth science as well.

Meanwhile, the facilities and devices are planned to meet the requirement of science experiments and research.

The paper will describe the work in scientific utilization planning for the CSS program. CSS will provide a solution for space utilization of larger scale.