P18

地に足がつかない高校生活(物理)

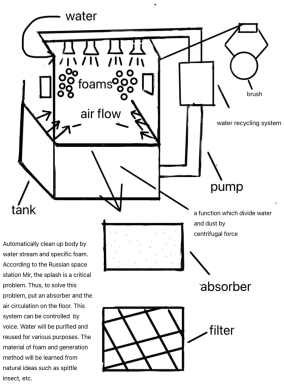
High School Life Without Ground (Physics)

○上原澄也[1], ○下山裕大[1], ○阿久沢駿介[1] , ○池田歩夢[1] , ○土屋光揮[1] ,北原浩太郎[1]
1　北杜市立甲陵高等学校,　Hokuto City Koryo High School, Team-PaleBlueDot

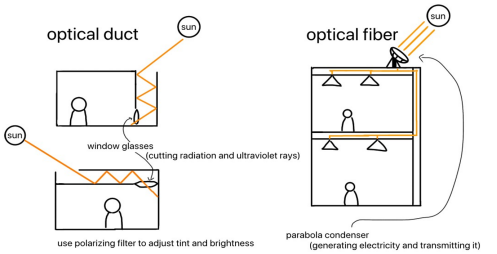
ABSTRACT

In this session, this paper studies the functional requirements for LEO habitation systems to implement perfect high school life. The systems below are necessary technologies and utilization methods to achieve ideal functions. We are very happy if JASMA professors would kindly give us many suggestions.

2.1 Relaxation System

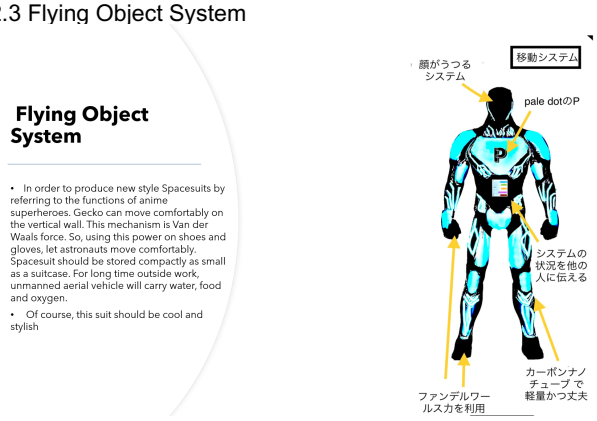


2.2 Illuminations System

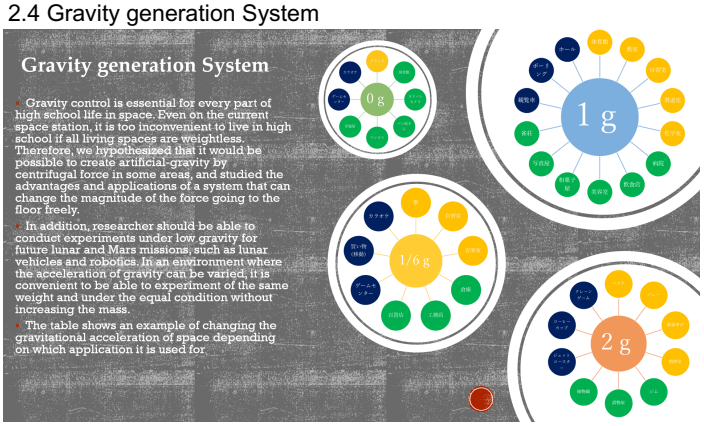


Illumination in space should use sunlight as much as possible.
・Sunlight in space includes strong radiation and ultraviolet rays. So, they should be cut by window glasses.
When the sun hides behind the earth, reflected sunlight with geostationary satellites or constellation satellites can be used.
・The LED lighting that can produce pseudo sunlight should be developed. Thinking of the relationship of circadian rhythm, the light is adjusted according to daily life and situations.
About the directions of illumination, the relation to the gravity should be considered.
For example, the lightshould indicate the gravity direction (i.e, from ceiling and illuminate overall if in zero gravity).

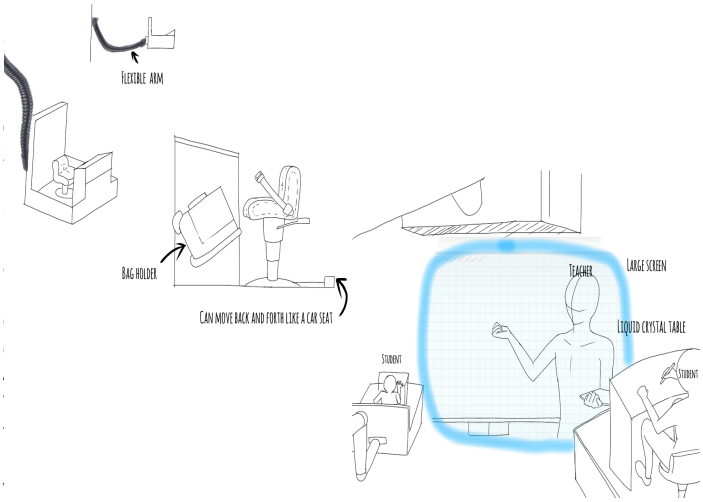
2.3 Flying Object System



2.4 Gravity generation System



2.5 School planning



3. Discussion and future works

In this issue, as part of the MEXT Super Science High School Program (SSH), we reported on the results of studies in five technical fields
To make use of the latest technology and materials, we would be grateful for the guidance of JASMAC researchers in various fields.
we would also like to ask the junior researchers to take over this research for further development into other fields.
We would like to devise a high school-operated experiment facility with various functions to contribute to the development of technologies for the Moon and Mars exploration.

4. Reference Documents

1)JAXA Space Life Story Book
2)NASA SSP 5000E INTERENATION SPACE STATION FLIGHT CREW INTEGRATION STANDARD
3)NASA SSP50008, INTERNATIONAL SPACE STATION INTERIOR COLOR SCHEME
4)NASA SSP50313, DISPLAY AND GRAPHICS COMMONALITY STANDARD, INTERNATIONAL SPACE STATION PROGRAM