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宇宙用閉鎖生態系生命維持技術の現状 - 国際宇宙ステーションの生命維持技術紹介 -
Current Status on CELSS for Human Space Activities - An Introduction of ECLSS on board ISS -

大西 充 [1*]
OHNISHI, Mitsuru[1*]

[1] 宇宙航空研究開発機構
[1]Japan Aerospace Exploration Agency

It is called ECLSS (Environmental Control and Life Support System) that provides suitable environment for human space activities. The smallest ECLSS is a space suit. On the other hand, ISS (International Space Station) has one of the largest ECLSS for long term stay. It looks like a very complicated chemical plant composed of several functions. Still, this ECLSS is a subset of fully CELSS (Controlled Ecological Life Support System). CELSS consists of air revitalization, food production, thermal control, waste disposal, and water recovery functions. The most important and difficult function is the food production. Current ECLSS on board ISS racks this. However we can’t have achieved this CELSS even on the ground yet. Anyway this ECLSS can keep the environment inside ISS comfortable, provide material requirement from human body, and process exhausting material from that. Let’s introduce the ECLSS on board ISS as a step to the fully CELSS.

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