

||||| 特集：JAMIC の成果 |||||  
(解説)

## 短時間微小重力実験による液滴ラジエータ要素の機能試験

戸谷 剛・永田 晴紀・工藤 勲

### **Verification Tests on the Functions of the Liquid Droplet Radiator Elements under the short-Duration Microgravity Environment**

Tsuyoshi TOTANI, Harunori NAGATA and Isao KUDO

#### **Abstract**

The liquid droplet radiator (LDR) is an important candidate to resolve a technical issue that is how to reject large quantities of waste heat from large structures in space, which handle high power (from megawatts to gigawatts). The performance of LDR elements under microgravity condition has been investigated. It has been clarified that (1) the diameters of droplets and spacing between droplets generated under microgravity can be formulated by the equations based on the law of conservation of mass in the process of generating droplets, (2) the uniform droplet stream is captured under microgravity without splashes, (3) the pumping performance of the working fluid of the centrifugal droplet collector under microgravity can be predicted by the sum of velocity head and pressure head generated in the gyrostatic flow, (4) the gear pump can also function normally under microgravity.