

SPACE POWER SYMPOSIUM (C3)  
Architectures, concepts and systems for space power (3)

Author: Mr. Tatsuhito Fujita  
Japan Aerospace Exploration Agency (JAXA), Japan, fujita.tatsuhito@jaxa.jp

Dr. Sasaki Susumu  
Japan Aerospace Exploration Agency (JAXA), Japan, susumu.sasaki@jaxa.jp

OVERVIEW OF STUDIES ON LARGE STRUCTURE FOR SPACE SOLAR POWER SYSTEMS (SSPS)

**Abstract**

Japan Aerospace Exploration Agency (JAXA) has studied Space Solar Power Systems (SSPS) using laser and microwave beams for years since 1998. In this system, the space solar energy is converted into other optical energies in the geostationary orbit, and optical energies are transmitted to the earth without depending on day and night. Therefore, this system is expected as a means to solve energy and environmental problems in the future.

Critical technologies for realizing SSPS are gathering of solar light, thermal control, phased array antenna, amplifier and generator of laser, convertor from sun light to laser and assembling of large structure. Especially assembling of large structure on orbit is one of the most critical but is not matured technology. It is the difficult problem how to establish this technology.

In SSPS large structure of km size must be assembled on orbit. Now we study how to assemble structure of 100m size on orbit as the middle target. Various styles of large structure for SSPS were suggested until now. We try to select the best style of large structure for SSPS.

This paper shows how to study on large structure of SSPS in JAXA and part of results in this study.