IAF SPACE POWER SYMPOSIUM (C3)
Wireless Power Transmission Technologies and Application (2)

Author: Mr. Takahiro Ohnishi
Tokyo University of Science, Japan, 1522505@ed.tus.ac.jp

Mr. Shuji Higashigawa
Hosei University, Japan, shuji.higashigawa.2p@stu.hosei.ac.jp
Ms. Miki Kaneko
Hosei University, Japan, miki.kaneko.6a@stu.hosei.ac.jp
Mr. Takumi Horibe
Hosei University, Japan, takumi.horibe.6i@stu.hosei.ac.jp
Ms. YUMI KAWAI
Hosei University, Japan, yumi.kawai.7m@stu.hosei.ac.jp
Mr. Tomu Matsutomo
Tokyo University of Science, Suwa, Japan, t220126@ed.sus.ac.jp
Mr. Naoki Warigai
Tokyo University of Science, Suwa, Japan, t220151@ed.sus.ac.jp
Dr. Koji Tanaka
Institute of Space and Astronautical Science (ISAS), Japan Aerospace Exploration Agency, Japan, ktanaka@isas.jaxa.jp

INTERNATIONAL SPACE SOLAR POWER STUDENT COMPETITION PAPER NO. 4

Abstract

This Abstract is a placeholder for a planned Space Solar Power Student Completion paper, to be selected. The 2023 International Space Solar Power Student Competition will encompass multiple disciplines, but will be focused this year around a particular Solar Power Satellite concept considered as a stage one for the achievement of this technology. During 2023, the focus will be on modular microwave wireless power transmission (WPT) Solar Power Satellite (SPS) concepts applicable to upper atmosphere/LEO demonstrator ground to device or device to ground testing and proof of concept. Acceptable disciplines/fields for research projects include: • architecture level system design activities, cost-benefit studies, etc.; • end-toend energy concepts technology (including wireless power transmission (WPT), solar power generation, etc.); • structural systems, controls and dynamics technology, and modeling of these considerations; • flight and/or space transportation technology and engineering for the SPS (including Earth-to-orbit or in-space transportation and/or propulsion); • ground systems and integration In addition, acceptable cross-cutting topics of general interest include: • the potential value of SPS in reaching goals to mitigate climate change issues; and, • near-term demonstration of relevant SPS concepts and technology; • mid-term demonstrations of relevant SPS concepts and technology (for example in low Earth orbit); • space resources utilization for SPS; • space policy, legal and regulatory considerations across all of the above (including international cooperation, spectrum management, space debris, etc.); and, • financing concepts for SPS systems and development.