

SPACE POWER SYMPOSIUM (C3)

Wireless Power Transmission Technologies, Experiments and Demonstrations (2)

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EXPERIMENTS ON DIRECTION FINDING USING ARRAY ANTENNA AND ON-BOARD
CALIBRATION OF PHASE ERROR FOR SOLAR POWER SATELLITE**Abstract**

We carried out the wireless power transmission (WPT) experiments on direction finding using the array antenna for receiving the pilot signals and on on-board calibration of phase error caused by temperature change of the microwave circuit. WPT from space to the ground is one of the significant technologies toward the solar power satellite (SPS). Tethered SPS consists of power generation and transmission panels that generates electricity and transmits energy using microwave. High gain antenna for the receiving of the pilot signals is necessary in order to decrease the up link power of the pilot signals. We measured the errors for phase measurement and amplitude measurement and evaluated errors of the direction findings. Also, REV method is a candidate of the calibration of the phase error for WPT system of the SPS, but it takes long time. We are developing the fast REV method utilizing the on-board near field REV. Basic properties of the near field REV using BBM for the WPT experiments are measured. Evaluation of the on-board REV will be presented.