

SPACE POWER SYMPOSIUM (C3)
Poster Session (P)

Author: Dr. Yonggang Chen

Beijing Spacecrafts, China Academy of Space Technology (CAST), China, ygchen@yeah.net

Prof. Chengan Wan

Beijing Spacecrafts, China Academy of Space Technology (CAST), China, wan001@vip.sina.com

Prof. Tingzhong Li

China, litz0207@sina.com

RESEARCH ON SEQUENTIAL SWITCHING SHUNT REGULATOR BASED ON SMALL SIGNAL
MODEL

Abstract

An analysis of the sequential switching shunt regulator(S3R) which is the important part of the power conditioning unit (PCU) is presented in this paper. Emphasis is on how to make certain the bus capacitor with the analysis of the bus ripple, and how to design the output impedance of the solar array and S3R system. Besides, an method which is to minimize the double-sectioning of the S3R system is discussed in this paper too. The design is verified by simulation based on PSIM and experimental results.