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# EXPERIMENT ON HEAT TRANSFER PERFORMANCE OF SPACE SCIENCE EXPERIMENT RACK THERMAL CONTROL SYSTEM

**Abstract**

Thermal control system (TCS) performance test setup was established based on space science experiment rack design indexes by ground experiments. The experiment scheme and measurement method can be suitable for performance tests of the TCS. Experiment rack TCS steady state results indicate that the setup is conducted to verify the design requirements. Heat transfer performance curves and flow distribution curves of the gas-liquid heat exchanger which is one of the main heat dissipation equipments were obtained based on the performance test analysis. The conclusion provides guidelines for the space science experiment rack TCS.