

Experimental study of a Dilution Refrigeration Unit for space applications

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Multiple space X-ray missions in China are under preparation in recent years including HUBS and DIXE. The demand for the Sub-Kelvin space refrigeration technology becomes urgent. The space dilution refrigerator with the advantages of continuous cooling power, little magnetic interference, and light weight has application prospects for space detection missions in future. A dilution refrigeration unit for the space application is designed to study the start-up process and dilution process in space. The unit starts successfully and obtains 162 mK. Based on the experimental results, the influencing factors including the circulation concentration, the viscosity dissipation, the single-phase extraction are carefully discussed for the performance and optimization.

Submitters Country

China

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