**Scientific Research on the Low Temperature Microgravity Physics Facility on ISS**
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A hallmark for fundamental physics research at low temperature is the ultra-high measurement precision. Recent advancements in measurement techniques have reached the extent that gravity is the only limiting factor in many areas of research at low temperature. Thus the Low Temperature Microgravity Physics Facility (LTMPF) on the ISS will expand the frontier, and provide scientists an unique research opportunity. The LTMPF is a state-of-the-art facility for long duration science investigations whose objectives can only be achieved in microgravity and at low temperature. It is a self-contained, reusable, cryogenic facility that will accommodate a series of low temperature experiments to be conducted on the Japanese Experiment Module Exposed Facility of the ISS, with a cryogen lifetime exceeding five months. This paper will describe several science experiments planned for early missions of LTMPF, as well as LTMPF science requirements, design capabilities and current status. Opportunities for utilization and collaboration will also be discussed.

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