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## **C3Or2C-02: Cryogenic Performance Test Platform for the Gas Bearings of Helium Turbine Expanders**

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Turbo- expander is the heart of the helium refrigerator, and the gas bearing as the critical component influences the stability of the turbine. There is 300K operating temperature difference between the expansion wheel and the gas bearing in the helium turbine. Therefore, it is necessary to consider the thermodynamics of the bearing-rotor when studying bearing dynamic stability. In this paper, a cryogenic test platform for gas bearings is designed to analyze the performance of gas bearings with cryogenic gas supply and study the impact on turbine stability.

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