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C2Po1A-03 [22]: Experimental Study on Response of Split Stirling cooler to Mechanical Conditions under Non-rigid Contact Conditions

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In mechanical experiments, the Stirling cooler is often rigidly contacted with the fixture, and mechanical condition applied on the cooler is the same as that generated by the shaking table. In some special cases, flexible design is needed between the cooler and the fixture, and the relative position between them will change during the vibration process. Then, the mechanical condition on the cooler is quite different from that generated by the shaking table. In order to obtain the response of the cooler to mechanical condition under non-rigid contact conditions, a split Stirling cooler is selected in this paper. A gap is designed between the cooler and the fixture. The response of the cooler to different mechanical conditions is tested, and the response spectrum is obtained. This study is helpful to further understand the response characteristics of split Stirling coolers to mechanical conditions, and also has certain reference value for the application expansion of Stirling coolers.

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