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Mon-Af-Po1.11-07 [7]: Design and experimental results of a Bi2223 superconducting magnet cooling by a free-piston Stirling cryocooler

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In this article, we presented a design and experimental results of a Bi2223 superconducting magnet cooling by a free-piston Stirling cryocooler. Depending on mechanics, thermal and electromagnetic multi-field couple analyzes results, we winding the coils with the type pancake type. We optimized the magnetic field by iron flange at the end of coils to avoid the vertical field effect of the Bi2223. And the coils are suspended from the room temperature vacuum vessel by six G10 suspension links. It is cooling by a Stirling cryocooler with the cooling power 14W@77K. Now we finished the magnet and test it with the highest magnetic field 1T with the temperature 62K with PCS in it, the test results will be reported.

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