

Basic Study about Superconducting Coils for Magnetic Sail

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In recent years, many scientists have proposed and researched new propulsion systems for deep space missions and magnetic sail is one of them. A thrust of Magnetic Sail is considered to be generated by utilizing the interaction between solar wind and magnetic field produced by the spacecraft. In order to get a high thrust, we think of using a superconducting coil, because a strong electric current can flow in superconducting materials without a loss. However, no study has been reported about superconducting coils for Magnetic Sail. Therefore we launched this research.

In this presentation, we will report the current status of evaluation of a thrust of Magnetic Sail with a superconducting coil whose radius is about 1 meter and the present situation of basic experiments about superconducting coils.