



**MT 26**  
**International Conference**  
**on Magnet Technology**  
Vancouver, Canada | 2019

Contribution ID: 1062

Type: **Poster Presentation**

## **Mon-Mo-Po1.10-11 [119]: Demagnetization performance of Superconducting Permanent Magnets under Vibration in Electrodynamic-suspension Levitation System**

*Monday 23 September 2019 09:15 (2 hours)*

Superconducting permanent magnet such as bulk, stack tapes and ring-shape magnet has been proved to be a potential candidate for superconducting motors. In real applications, especially the superconducting electrodynamic-suspension(EDS) levitation system, vibrations in all directions during high speed operation are unavoidable. This paper focuses on the demagnetization process of superconducting permanent magnets under different kind of vibrations. Firstly, test samples, including stack tape, ring-shape magnet, are fabricated by laser cutting and epoxy packaging technique. Modification of commercial vibration platform is done to represent the vibration condition of EDS levitation system. The central magnetic field is chosen as the key parameter to evaluate the demagnetization performance of test samples. Both experimental and numerical methods are used to explore the demagnetization mechanism during vibration. Results obtained in this paper will be crucial for the design of excitation system as well as the cooling system in the EDS levitation system.

**Author:** Dr SHENG, Jie (Shanghai Jiao Tong University)

**Co-authors:** Dr WU, Wei (Shanghai Jiao Tong University); HUANG, Zhen (Shanghai Jiao Tong University); Prof. JIN, Zhijian (Shanghai Jiao Tong University); Dr LI, Xiaofen (Shanghai Jiao Tong University)

**Presenter:** Dr SHENG, Jie (Shanghai Jiao Tong University)

**Session Classification:** Mon-Mo-Po1.10 - Levitation and Magnetic Bearings II