



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

Contribution ID: 914

Type: **Poster Presentation**

## **Wed-Mo-Po3.13-06 [114]: Electromagnetic performance of HTS linear generator under Field-Cooled and Zero-Field-Cooled condition**

*Wednesday 25 September 2019 09:30 (1h 45m)*

The design of a cylindrical linear generator involves the calculation of the stator winding as a function of the magnetic field inside the solenoid, in such a way that the generation of the voltage obtained will be a function of the number of turns and the speed of the movement of the magnetic field inside. On the other hand, the use of HTS tapes in applications of linear electrical machines involves different aspects in their development such as: the configuration of the geometry, according to the anisotropic behavior of the material, depending on the incidence of the magnetic field on its surface; where another aspect to consider is the cooling method used to reach the superconducting state.

In the present work the comparative results of the electromagnetic evaluation of a linear generator constructed with tapes of BSCCO and YBCO are presented according to the cooling method; with absence of magnetic field (ZFC) and presence of the magnetic field (FC) incident on the winding. Where the voltage generated are obtained as a function of the speed of the movement of the magnetic field and the cooling method used; as well as the force generated from the evaluation as a linear motor. The results obtained show a superior behavior in the generator built with YBCO respect to BSCCO.

**Author:** Dr GONZALEZ-PARADA, Adrian (Universidad de Guanajuato)

**Co-author:** Dr HERNANDEZ-ROBLES, Ivan Abel (Universidad de Guanajuato)

**Presenter:** Dr GONZALEZ-PARADA, Adrian (Universidad de Guanajuato)

**Session Classification:** Wed-Mo-Po3.13 - Motors X