



Contribution ID: 203

Type: **Poster Presentation of 1h45m**

## **Design, manufacturing and testing of a unique coil collaring system for the Jefferson lab's large superconducting magnets SHMS Dipole and Q2Q3 quadrupoles**

*Monday, 28 August 2017 13:15 (1h 45m)*

Three large superconducting magnets have been designed and built by Sigmaphi (France) for the Jefferson Lab's 11 GeV/C Superconducting Spectrometer. These SHMS Dipole and Q2/Q3 quadrupoles use the same collaring system based on aluminum force rings designed to ensure coil integrity and avoid conductor motion. The coil properties have been determined thanks to mechanical tests at room temperature and at 4.2K. Conclusions of the FEA analysis performed by Sigmaphi have been verified thanks to strain measurements on a collaring prototype and during final collaring. Final acceptance tests done at JLAB are also presented.

### **Submitters Country**

FRANCE

**Primary authors:** PORHIEL, Amaury (Sigmaphi); FOREST, Frederick (SIGMAPHI); DELBECQ, morgan (sigmaphi); Mr RAMAUGE, David (Sigmaphi); Dr ANTOINE, S. (Sigmaphi Accelerator Technology); Mr SIGALO, Vincent (Sigmaphi); Mr BRINDZA, Paul (Jefferson Lab); Mr SUN, Eric (Jefferson Lab); Mr LASSITER, Steven (Jefferson Lab)

**Presenter:** PORHIEL, Amaury (Sigmaphi)

**Session Classification:** Mon-Af-Po1.02

**Track Classification:** A5 - Particle Detector Magnets