



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

Contribution ID: 1578

Type: **Poster Presentation**

## **Tue-Mo-Po2.03-08 [14]: An investigation of the electromagnetic Interactions between the CLAS12 Torus and Solenoid Superconducting Magnets at Jefferson Lab**

*Tuesday, 24 September 2019 08:45 (2 hours)*

The Jefferson Lab 12 GeV Upgrade of Experimental End Station Hall B required a new detector system that would be more sensitive to forward going particles and handle higher luminosity. This new detector is CLAS12 and includes two superconducting iron-free magnets – a torus and a solenoid. The Torus magnet consists of 6-trapezoidal racetrack-type coils while the solenoid is an actively shielded 5 T magnet. The torus and the solenoid are located in close proximity to one another and are surrounded by sensitive particle detectors. The Torus and solenoid, operating at 3770 A and 2416 A respectively, were commissioned successfully and are operating normally. This paper will present an investigation of the electromagnetic interactions, which include induced static mechanical loads and inductive coupling. Modelled results and actual measured data during normal and off normal operation of the magnets is presented.

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**Session Classification:** Tue-Mo-Po2.03 - Detector Magnets II