

# ACCELERATOR SEMINAR

## “Cavity Design for Harmonic Superposition”

***Brock F. Roberts,  
Electrodynamic, Corp.***

Abstract: A new cavity design has been developed that exclusively resonates many harmonic TM<sub>0N0</sub> modes simultaneously. This cavity design was recently used at JLAB by the staff of the center for injectors and sources (CIS) to non-invasively characterize electron bunches produced by their DC photogun. The success of this study lends credibility to the idea that these cavities could find other useful applications at JLAB. This talk will include an overview of harmonic cavity design, the beam monitor application, and potential applications of transverse beam kicking, beam bunching, and bunch shaping.

Electrodynamic is a small business in Albuquerque New Mexico that competes annually in the DOE's SBIR program. It is largely due to the beneficial collaboration with JLAB that Electrodynamic has been selected to receive a 2013 Phase I SBIR to continue the development of this exciting technology.

**Coffee before seminar at 10:45 a.m.**

**Thursday, January 17, 2013  
11:00 a.m.  
CEBAF Center, Room F113**