

# **SPECIAL CASA SEMINAR**

## **“Development of Two Digital Beam Feedback Systems to Damp Longitudinal Beam Instabilities at the PLS and Duke University Storage Rings”**

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In the high current electron storage rings, the interactions between the higher order modes (HOMs) of RF cavities and circulating electron bunched would induce large energy deviations between bunches. The problem is known as the coupled bunch mode beam instabilities and induces a big difficulty to increase stored beam current and intensity of photon beams. To cure those instabilities at the Pohang Light Source (PLS) and Duke University storage rings, two digital longitudinal beam feedback systems were developed. During this talk, speaker will introduce the basic theory of the longitudinal coupled bunch mode beam instabilities and status of the coupled bunch mode beam instabilities at the PLS and Duke University storage rings. Then, speaker will show working principles, design concepts of the digital beam feedback system, development of two HOM damped RF cavities for the feedback system kickers and commissioning results of those beam feedback systems at the PLS and Duke University storage rings.

**Wednesday, November 10 2010**

**9:30 a.m. – 10:30 a.m.**

**CEBAF Center, Room L102/104**