

# **ECE Seminar Announcement**

*The Department of Electrical and Computer Engineering at Colorado State University will host the following seminar:*

## **Broadband optical measurements with femtosecond frequency combs**

*by:*

**Dr. Ian Coddington**

**National Institutes of Standards and Technology**

**Time-Frequency Division, Boulder, CO**

**Monday, May 4, 2009**

**11:00 AM - 12:00 PM**

**Lory Student Center (LSC)**

**Room 211E**

### ***ABSTRACT:***

Femtosecond frequency combs have become a powerful tool in the field of frequency metrology. At the same time, the strengths of frequency combs- their low timing jitter and high coherence over a broad optical spectrum- make them ideally suited for coherent linear sampling. In this technique distortions on transmitted light are measured to determine a samples optical response. The technique is quite flexible and possible samples include active and passive telecom components, molecular gas cells and air space LIDAR paths. As one might expect, in each of these applications frequency combs offer an impressive increase in the frequency and timing accuracy/resolution of the measurements. Less intuitively, the high coherence of frequency combs also leads to high signal to noise and rapid acquisition, which are equally important for most practical applications.

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