

TUFTS UNIVERSITY
Physics and Astronomy Colloquium

**“Perspectives on the Advanced
Version of Gravitational Wave
Laser Interferometers”**

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The ongoing and planned data acquisitions from LIGO and VIRGO might provide the first direct measurements of gravitational wave signals. In this talk I will review a new perspective on which physical parameters will be possible to estimate with the current and planned laser interferometers. I will also discuss the capability of discriminating among different models of gravitation. The main mathematical tool that will be used is an expansion of the bias and covariance of a maximum likelihood estimation of the parameters in terms of signal-to-noise ratio powers. The higher orders of these expansions, that can be derived from Dyson-type equations, provide new knowledge with respect to the standard Fisher Information based error studies. The general applicability of these expansions will be addressed.

Thursday, July 22, 2010

3:00 pm

Anderson 208

Refreshments served in Robinson 251 at 2:30 pm