

Title: Gravitational Waves

Lecturer: Professor WEINSTEIN, A

Date and Times: 4th August at 11:15

Summary of the proposed talk:

We will present a brief introduction to the physics of gravitational waves and their properties. We will review potential astrophysical sources of gravitational waves, and the physics and astrophysics that can be learned from their study. We will survey the techniques and technologies for detecting gravitational waves for the first time, including bar detectors and broadband interferometers, and give a brief status report on the international search effort, with special emphasis on the LIGO detectors and search results.

Prerequisite knowledge and references

The talk will be in the form of a university physics colloquium, accessible to second-year undergraduate physics students.

Professor WEINSTEIN, Alan

Alan Weinstein is Professor of Physics at Caltech, studying the physics of elementary particles for 25 years.

He has worked with the Crystal Ball Collaboration at SLAC SPEAR, studying the physics of charmonium; the Mark III Collaboration at SLAC SPEAR, studying the physics of D mesons; the Mark II Collaboration at SLAC SLC, studying the decays of the Z⁰; and for the last 12 years, with the CLEO Collaboration at Cornell's CESR collider, studying the physics of the tau lepton and the B mesons.

For the last 6 years, he has working with the LIGO Scientific Collaboration, developing advanced interferometer configurations for gravitational wave detection, and searching the LIGO data for gravitational wave bursts. Most recently, he has joined the effort to develop a space telescope dedicated to measuring the history of the expansion of the universe and the clustering of dark matter in the universe.