

Physics Seminar

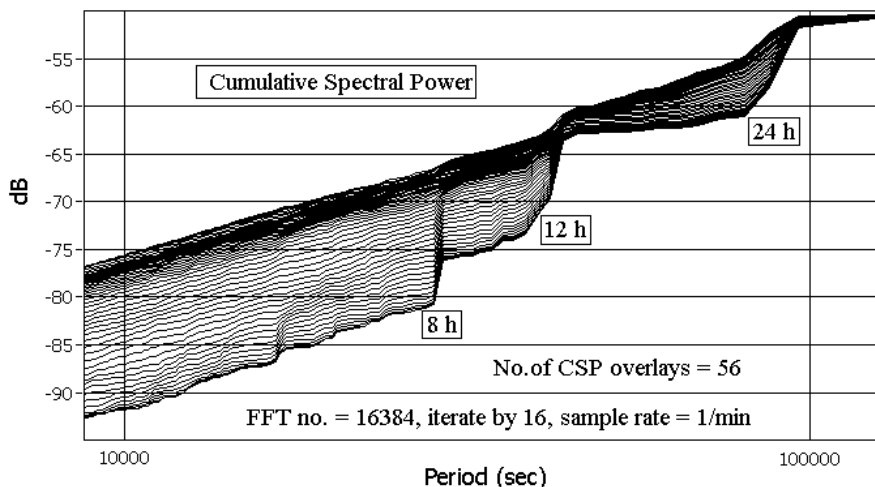
Wednesday 1/16/2008, 4:30 pm
Science & Engineering Building Auditorium

Randall D. Peters

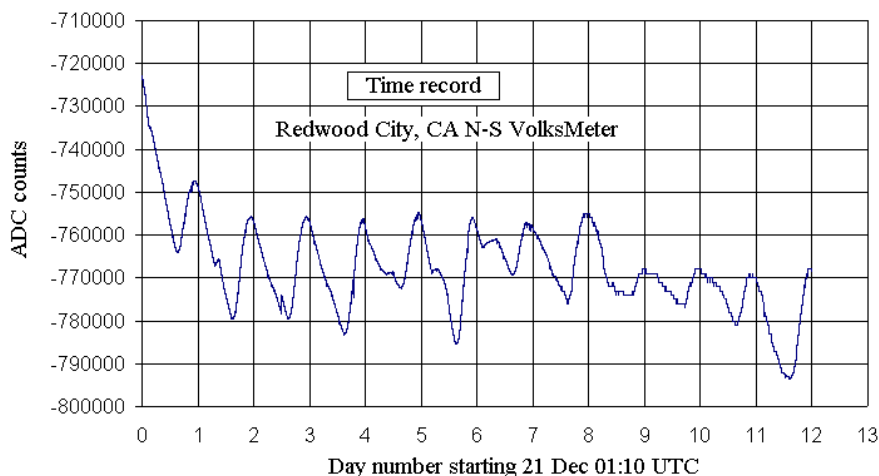
Physics Department - Mercer University

Abiding Influence of the Pendulum

The pendulum is an instrument of great historical importance because of its role in the development of classical physics. That fact alone makes it a significant component of science education. Its importance to forefront research was again realized during studies following which a rigid-body form of the pendulum became an archetype of chaos. Refusing to view the instrument as a relic from the past, a small number of researchers have recently revisited old complex phenomena that are largely now forgotten. These include ones that could only be noted with frustration by several famous 19th century physicists, including Lord Kelvin.



A crucial technology-triad was necessary for success: (i) high-tech sensors with which to sense pendulum motion, (ii) means to get the data from such sensors into powerful computers now widely available, and finally (iii) the existence of powerful, yet user-friendly software to analyze the stored information.



This talk will describe a number of fascinating, yet barely known events of history (such as Foucault's trouble with the 'pedigreed' scientific establishment); it will finish with detailed discussions of some exciting recent discoveries made possible by modern forms of the pendulum, operating with a synergetic combination of the aforementioned triad. An example is shown in the accompanying graphs, in which a little-known 8-h terdiurnal tide (associated historically with the atmosphere) is seen to influence a pendulum in the form of a commercial instrument better known as a horizontal seismograph.

Please join us for light refreshments at 4:15pm outside SEB 203.