

Physics Seminar

Friday, 3:30 pm Feb. 25, 2011

Effects of Altitude on the Thiele-Small Parameters

Diego A. Alcala with Dr. Courtney Willis at UNC

Modern Low-range loudspeakers are designed and tested using a set of mathematical guidelines (Thiele-Small parameters), which describe how several common properties of speakers interact with each other. The current Thiele-Small parameters have no mention of altitude (atmospheric pressure), or how the performance of loudspeakers might be affected by a change in altitude. The hypothesis is that altitude will have a measurable effect on the Thiele-Small parameters. By measuring the Thiele-Small parameters of various loudspeakers in 3 different sized enclosures at altitudes of 5,000 feet and 10,000 feet, this research will help to determine whether or not companies, music grounds, and average consumers need to worry about sub-par audio quality sound production at altitudes high above sea level.

A Novel Way to Measure the Distance to an Asteroid

Maurice Woods III and Others at UNC

The oldest and most reliable method to measure the distance to a point of light in the sky is that of parallax. When an astronomical object is observed from the two ends of a baseline, mere trigonometry reveals its distance if it is sufficiently close to Earth. Students would benefit from hands-on opportunities to use the parallax method. Most such experiments are either trivial or very difficult to carry out. We report on our remote use of telescopes in New Mexico and Spain to obtain simultaneous images of a main-belt asteroid. From those images the parallax method yields a distance to the asteroid within 10% of the accepted value.

Location: Ross 0220 (Ground level of Ross Hall)
(Refreshments will be served at 3:20pm.)

Physics/EPS/NHS/UNC

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<http://www.unco.edu/nhs/physics/>

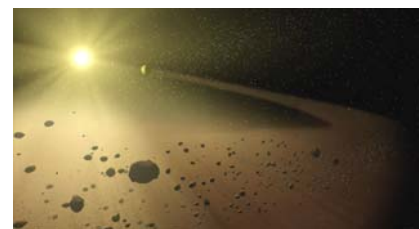


Image from NASA/JPL