

PHYSICS DEPARTMENT COLLOQUIUM

“The MARIACHI Experiment, Detecting UHE Cosmic Rays via Radar”

BY

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The Mixed Apparatus Radar Investigation of Atmospheric Cosmic-rays of High Ionization project, (MARIACHI) seeks the detection of Ultra High Energy Cosmic Rays (UHECR) via radar. Radio scattering techniques allow for the coverage of large areas that are required for the study of these rare occurring event. The first step to develop this technique is to search for coincidence signals between radar and simultaneous detection of cosmic ray shower particles. The experiment is being installed in an unconventional fashion on Long Island, NY by deploying detectors in high schools and community colleges. Parasitic bi-static radars will be installed at three or more locations and GPS clocks will be used to synchronize all sites in the experiment. The data collection system is spread over a large geographical area and will use Grid Computing technology. We will discuss the challenges of this technique and current implementation status. The strong educational component of MARIACHI will also be presented.

THURSDAY, March 15, 2007
4:00 PM IN 102 JFB
REFRESHMENTS AT 3:30 PM IN 219 JFB