NUCLEAR SEMINAR SERIES

Dr. Markus Schiffer

University of Cologen, Germany

Monday, February 24

4:00 pm - Rm 184 NSH

The AMS measurement capabilities at the University of Cologne

The Cologne center for accelerator mass spectrometry (CologneAMS) uses a 6 MV AMS system from HVEE and a dedicated AMS beamline for medium mass isotopes at the 10 MV FN tandem accelerator. Measurements of ^{10}Be, ^{14}C, ^{26}Al, ^{36}Cl and actinides are performed in routine operation since the founding in 2011.

The 6 MV AMS system was subsequently extended by a gas ion source and a gas handling system, dedicated for small ^{14}C samples. This enabled in-situ ^{14}C and compound-specific AMS measurements. Because of the accessible high ion energy at the 10 MV FN accelerator an AMS beamline was build up, consisting of an injection system, an achromatic high energy mass spectrometer and an 135° gas-filled magnet for ^{53}Mn and ^{60}Fe measurement.

New research projects are the measurement of ^{41}Ca in reactor concrete as a reference nuclide for nuclear waste management and the determination of ^{3}H, ^{14}C and ^{36}Cl in reactor graphite. Therefore a new gas handling system for CO_2 samples with high ^{14}C concentrations is under construction, as well as a 100 kV tandem accelerator for ^{3}H measurements. Additionally it is planned to install a 3 MV tandetron AMS system for nuclear waste management measurements.

PHYSICS

I S N A P INSTITUTE FOR STRUCTURE AND NUCLEAR ASTROPHYSICS