Minutes from the ISAC Forum Meeting held on Dec 14th 2005

E956 Search for Tensor Interactions in the decay of polarized ^{80}Rb ……...J.Behr

John reviewed the motivation for this experiment. By studying the recoil nucleus asymmetry for a pure Gamov-Teller transition , non V-A components of the weak interaction can be search for. The standard model predicts a zero asymmetry in first order and second order corrections can be calculated and are small. ^{80}Rb atoms can be trapped in large number (1M per sec) and the recoils ^{80}Kr ions can be detected efficiently at TRINAT . The experiment consists in comparing the recoil distributions for two opposite spin configurations. To reduce background a coincidence with shake –off electrons has been developed. A factor 50 improvement in efficiency is expected. One systematic error remains to be tackle having to do with the position shift of the atom cloud when the spin direction is reversed. The goal of the few extra shifts to be allocated is to test a method of controlling that error and to gather more statistics.

E823: studies of super-allowed beta decay transitions……G.Ball

Gordon reported that the ^{62}Ga beam was 10^4 per sec with a signal to background ratio of 100/1. This was to be compared to their previous data taking in Dec03 when they had 800counts/sec with a 5/1 signal to background ratio.
They ran at the GPS station to improve the life time measurement .It is expected to get a +/-.02ms precision .The beam was then directed to the 8π spectrometer for a search for weak 0+ direct transitions to improve the branching ratio determination of the super-allowed branch.

ZrC target……..M.Dombsky

Marik described his evaluation of the ZrC target performance . This target was using a Ta liner to suppress surface ionization of the Cu versus Ga, while preserving good ionization of the Rb. The target performs well and Marik was able to see some ^{61}Ga at a few hundred counts per second. Some further optimization of the operating temperature is possible if better control of the beam profile would be available.

E1024 $^{40}Ca^{++}(\alpha,\gamma)$……..C.Vockenhuber

5 10^{15} ^{40}Ca ions were directed to the Dragon gas target with only .5% ^{40}Ar contamination and currents in the 20enA range. Good transmission (90%), good beam spot (2mmΦ) and good energy resolution were achieved with Buncher ON. An excitation curve between 840 and 1140 KeV/u was measured with 50 energy changes. The charge state enhancer foil (SiN) lasted more than 600naHour. The buncher was producing an order of

magnitude better suppression of the beam. Good identification of ^{44}Ti was obtained by a combination of ion chamber dE/dx ,time of flight and γ–γ coincidences .The charge state distribution after the SiN foil has been checked as function of energy. The data is now under analysis.

OLIS Si beam development…….. M.Marchetto

In the absence of Kerthi , Mario reported on the Si beam development which is required by the Dragon team to establish the charge state fraction of the reaction products in the ^{26g}Al(p,γ) experiment (E989).This is using Silane gas and many peaks have to be resolved in the mass spectrum obtained, with several isobars present. The RFQ had to be conditioned at higher voltage to accelerate mass 31. A large concerted effort is required by the OLIS and ISAC accelerator team to provide this crucial beam. Care is taken not to exceed the comfortable zone of operation.

^{7}Li beam test:……..P.Levy

Phil has designed an improved version of the Na neutralizer cell for the polarized beam line. He would like to measure the neutralization efficiency of the new design

ISAC-II accelerator……..R. Laxdal

Bob reviewed the current status of the superconducting Linac. Out of five modules three are fully tested and operational, one has a small vacuum leak and one is in final assembly. Final alignment and installation of the beamline are now scheduled for January with RF testing towards the end of January. The CNSC is reviewing our application for a commissioning license and may require a local inspection before allowing the full accelerator test.

Next meeting January 4th 2006 at 10:30 a.m.