

ISAC Science Forum, 2004-09-01

PRESENT: Friedhelm Ames, Gordon Ball (GCB), John Behr, Pierre Bricault, B. Bushaw, Jac Caggiano, Thomas Cocolios (TC), Paul Delheij, Marik Dombisky (MD), Guido Ewald, Greg Hackman (GH), Andy Hurst (AH), Dave Hutcheon, Peter Jackson (KPJ), W. David Kulp (WDK), Jens Lassen, Colin Morton (ACM), Kei Minamisono, W. Nörtershäuser (WN), Matthew Pearson, Jean-Michel Poutissou (JMP), Rodolfo Sanchez, Paul. Schmor, Alan Shotter -- Notes transcribed by GH

Reports on Prior Beam times

E973, Shape Coexistence in ^{156}Dy : W. David Kulp

WDK reported on behalf of the collaboration encompassing 13 institutions that participated in this experiment. In this first "commissioning" experiment with the Louisiana State PACES Si(Li) array, a previously known $E0\ 0_{\beta}^{+} \rightarrow 0_{g}^{+}$ transition in ^{156}Dy following beta decay of ^{156}Ho was observed. Detailed offline analysis will be necessary to identify the low-spin states populated from the beta decay of the 1^{-} isomer ^{156m}Ho , which has not been seen before but is estimated to be approximately a 0.3% branch relative to decay to ^{156g}Ho . WDK compared spectra from this mass-separated ISOL-type experiment to earlier data taken with the 8π in Berkeley using wet chemical separation, the new 8π spectrum is generally cleaner, and in particular it does not exhibit high-energy or 511-keV lines from other Ho isotopes. This is especially important as some of the lines of interest lie at the Compton edge for 511 keV. This experiment pushed the existing DAQ storage to its limits, and WDK suggested removable hard drives in 4-bay cages similar to those used at Georgia Tech. See also:

- <http://trshare.triumf.ca/~hackman/E973a.pdf>
- <http://trshare.triumf.ca/~hackman/E973b.pdf>

Report on Upcoming Beam Time

E991, Isotope Shift of ^{11}Li : W. Nörtershäuser

WN reported that their experimental setup was running, and OLIS had been tuned and would deliver $^{6,7}\text{Li}$, moving to $^{8,9}\text{Li}$ when available. Lasers were working and stable. In subsequent discussion, it was noted that the experiment could handle beam rates up to 10^{10} atoms per second, and while they would need to reset their enhancement chamber every two hours, there would be no need to break vacuum.

Other Discussion

High Power Target commissioning: PB reported HV conditioning ongoing but there were some interlock problems to be solved. It was expected to go to $70\ \mu\text{A}$.

Safety: GCB asked if it was the experimenter's duty to remove restricted area signage, or if it was operations. GCB was told to call Safety.

Current target: It was noted that there was no intention at this time to test the effect of proton tuning (e.g. beam size) on the current target, as it was not clear what tests would

give meaningful results. MD repeated that long-lived (minutes) isotope yields are still down by ~2, and shorter-lived (e.g. ^{11}Li) down by ~10, from the targets of last fall.

Scheduling: JMP noted that the ISAC schedule on the web is final. It was noted that many users and spokesmen for ISAC experiments are not notified when schedules come out; JMP will have all ISAC users added to the subscription for these e-mail notices. JMP also will look into having previous schedules posted.

Strategy: The ISAC Beam Strategy group will meet again Friday Sept. 10, and is expecting an update report from JB on the actinide target. JMP will report on this meeting at the next Science Forum.

Pot-Pourri:

- ISAC facilities meeting upcoming, to discuss ISAC-II HEFT layout (announced separately)
- EMMA draft RTI-3 proposal to be presented at next Forum
- Workshop on TUDA-II being organized for next fall – contact Pat Walden