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F U R T H E R C O M M E N T S

to proposal P160

HIGH-PRECISION MASS MEASUREMENTS OF EXOTIC NUCLEI WITH THE TRIPLE-TRAP MASS SPECTROMETER ISOLTRAP

K. Blaum[1], G. Audi[2], D. Beck[1], G. Bollen[3], S. Heinz[4], F. Herfurth[5], H.-J. Kluge[1], A. Kellerbauer[4], D. Lunney[2], R.B. Moore[6], C. Scheidenberger[1], S. Schwarz[3], L. Schweikhard[7]

[1]GSI, Planckstraße 1, 64291 Darmstadt, Germany
[2]CSNSM-IN2P3-CNRS, Université de Paris Sud, 91406 Orsay, France
[3]NSCL, Michigan State University, East Lansing, MI 48824, United States of America
[4]Institut f. Physik, Ludwig Maximilian Universität, 85748 München, Germany
[5]CERN, Division EP, 1211 Genève, Switzerland
[6]Physics Dept., McGill University, H3A 2T8 Montréal (Québec), Canada
[7]Institut f. Physik, Ernst Moritz Arndt-Universität, 17487 Greifswald, Germany

Spokesperson: Klaus Blaum (*Klaus.Blaum@CERN.ch*)
Contactperson: Frank Herfurth (*Frank.Herfurth@CERN.ch*)

In proposal P 160 we asked for 104 shifts of radioactive beam for high-precision mass measurements of short-lived nuclides with the Penning trap mass spectrometer ISOLTRAP. The proposed mass measurements covered four different fields of interest. A detailed list was given in the proposal.

As requested by the committee we would like to add a priority list to our original proposal indicating which masses we would like to address first. We have divided the list in two parts; those masses which we would like to address first since they have high priority (**) and those masses which we would like to address second (lower priority, *). The list is not only based on the importance of the physics output by these mass measurements but also on the required preparatory studies with our setup and on the targets needed to get access to some of the proposed masses.

As already mentioned in the proposal for some of the proposed mass measurements technical preparatory work is needed. This is especially the case for the light mass region (^{6,8}He, ^{9,11}Li, and ^{11,12}Be) where cooling in the RFQ ion beam cooler and buncher and the cooling Penning trap by H_2 gas (instead of He) has to be demonstrated. In addition we have to change for very short-lived nuclides (half-lives < 50 ms) the time structure of our measurement cycle which requires some changes in the ISOLTRAP control program.

Priority list:

Nuclides	Field of interest	No. of shifts	Priority	Target
^{14}O	CVC, CKM	3	**	SiC
$^{17-19}$N	halo, IMME	6	**	CaO
$^{17-19, 23-26}$Ne	halo, IMME	7	**	MgO / UC
^{22}Mg	CVC, CKM	4	**	SiC
^{26m}Al	CVC, CKM	3	**	SiC
^{38m}K	IMME	4	**	Ti metal foil
^{62}Zn	CVC, CKM	2	**	Nb foil
^{62}Ga	CVC, CKM	6	**	ZrO_2
^{74}Rb	CVC, CKM	6	**	Nb foil
$^{67-71}$Ni	mass surface	5	**	UC
$^{67-78}$Cu	Mass surface	8	**	UC
54 radioactive beam shifts				
^{6,8}He	Halo	4	*	ThC / UC
^{9,11}Li	Halo	4	*	Thin Ta foil
^{11,12}Be	Halo	3	*	UC or Ta foil
$^{74-79}$Zn	Mass surface	4	*	UC
$^{74-83}$Ga	Mass surface	5	*	UC
$^{58-66}$Mn	Mass surface	5	*	UC
$^{115-124}$Ag	mid masses	7	*	UC
$^{125-131}$Cd	mid masses	5	*	UC
$^{131-134}$Sn	mid masses	3	*	UC
$^{211-216}$Tl	heavy masses	4	*	ThC / UC
$^{213-217}$Pb	heavy masses	3	*	ThC / UC
$^{215-218}$Bi	heavy masses	3	*	ThC / UC
50 radioactive beam shifts				