

The background features a teal-to-blue gradient with a starry texture. On the left side, there are several circular elements: a large scale with numerical markings from 140 to 260, and several smaller circles with arrows indicating clockwise or counter-clockwise rotation. The main text is positioned on the right side of the image.

# COMPILED RESULTS

DHANURDHAR BAJPAI (U.A.)

# CALIBRATION CONSTANTS FROM OCT 20-21 AND NOV 7 CALIBRATION RUNS

Calibration constants from Oct 20-21 and Nov 7 calibration runs										
Detector #	Energy calibration		Red $\chi^2$	Residuals	Lines excluded	Energy calibration		Red $\chi^2$	Residuals	Lines excluded
	Fit func. $y = a+b*x$			$E_{true} - E_{fit}$		Fit func. $y = a+b*x$			$E_{true} - E_{fit}$	
	a (keV)	b (keV/a.u.)	a (keV)		b (keV/a.u.)					
	<i>Oct 20-21 run</i>					<i>Nov 7 run</i>				
1	2.22E-11	7.97E-01	69.4	(-1.9)- (0.29)	0	1.14E-09	4.07E-01	5.4	(-0.53)- (0.37)	3
2	1.01E-01	4.61E-01	10.1	(-0.18)- (0.31)	0	3.54E-03	2.35E-01	4.4	(-0.33)- (0.2)	3
3	4.44E-11	7.86E-01	124.5	(-1.59)- (0.25)	1	2.22E-11	4.01E-01	8.5	(-0.29)- (0.4)	3
4	4.44E-11	8.92E-01	65.3	(-0.47)- (0.73)	0	1.11E-10	4.55E-01	14.4	(-0.46)- (0.63)	3
5	3.09E-02	4.00E-01	2.9	(-0.16)- (0.34)	1	5.33E-02	4.01E-01	5.1	(-0.26)- (0.22)	3
6	0.00E+00	4.24E-01	2499	(-0.29)- (3.85)	0	2.55E-10	2.17E-01	68.8	(-0.28)- (0.35)	5
7	1.10E-02	4.43E-01	12.1	(-0.38)- (0.25)	2	0.00E+00	2.26E-01	7.9	(-0.18)- (0.2)	3
8	8.64E-01	7.24E-01	31.1	(-0.46)- (0.58)	0	3.95E-02	3.70E-01	6.4	(-0.31)- (0.28)	3

# ENERGY RESOLUTION FROM OCT 20-21 EU152 CALIBRATION RUN

Energy resolution from Oct 20-21 Eu152 calibration run											
Detector #	Energy resolution			Red $\chi^2$	FWHM @1.33 MeV (keV)	Energy resolution			Red $\chi^2$	FWHM @1.33 MeV (keV)	Lines excluded
	Fit func. $y = (a+b*x+c*x^2)^{0.5}$					Fit func. $y = (a+b*x+c*x^2)^{0.5}$					
	a (keV) <sup>2</sup>	b (keV)	c	a (keV) <sup>2</sup>	b (keV)	c					
	<i>With sys+stat err</i>					<i>With stat only err</i>					
1	7.64E+00	8.70E-03	-1.56E-06	0.39	4.06E+00	8.07E+00	5.84E-03	6.41E-07	51.9	4.12E+00	None
2	5.55E-01	2.02E-03	8.79E-07	0.006	2.19E+00	5.62E-01	1.98E-03	9.04E-07	1.6	2.19E+00	None
3	2.76E+00	7.47E-03	-1.36E-06	0.36	3.21E+00	3.09E+00	5.93E-03	-3.00E-07	52	3.23E+00	1212.9 keV
4	3.01E+00	1.25E-03	1.54E-06	0.03	2.72E+00	3.11E+00	1.02E-03	1.65E-06	11	2.72E+00	None
5	3.32E+00	3.01E-03	3.50E-06	0.05	3.68E+00	3.40E+00	2.76E-03	3.63E-06	39	3.67E+00	1212.9 keV
6	5.52E-01	1.36E-03	1.74E-06	0.02	2.33E+00	5.60E-01	1.31E-03	1.77E-06	3.8	2.33E+00	None
7	4.00E+00	2.55E-03	3.77E-06	0.22	3.75E+00	4.42E+00	2.03E-04	5.33E-06	61.6	3.76E+00	411.1, 1212.9 keV
8	2.64E+00	3.46E-03	2.34E-06	0.09	3.37E+00	2.77E+00	2.79E-03	2.86E-06	21.2	3.40E+00	None

# SUMMARY

- All 8 detectors are calibrated with gaussian filter using data from two dates and the calibration constants are tabulated
- Energy resolution from Oct 20-21 data and resolution at 1.33 MeV is tabulated



# NEXT STEPS

- Waiting for trapezoidal filter data to repeat the calibration steps
- Energy resolution for Nov 7 data is to be studied