

2010



Januar	Februar	März	April	Mai	Juni
1 Neujahr ☼☼☼ 53	1 Mo 5	1 Mo 9	1 Do	1 Maifeiertag ☼☼☼(z.T.)	1 Di
2 Sa	2 Di	2 Di	2 Karfreitag ☼☼(z.T.)	2 Sonntag	2 Mi
3 Sonntag	3 Mi	3 Mi	3 Sa	3 Mo 18	3 Fronleichnam ☼(z.T.)☼☼(z.T.)
4 Mo 1	4 Do	4 Do	4 Ostersonntag ☼	4 Di	4 Fr
5 Di	5 Fr	5 Fr	5 Ostermontag ☼☼☼(z.T.) 14	5 Mi	5 Sa
6 Hl. Drei Könige ☼(z.T.)☼☼(z.T.)	6 Sa	6 Sa	6 Di	6 Do	6 Sonntag
7 Do	7 Sonntag	7 Sonntag	7 Mi	7 Fr	7 Mo 23
8 Fr	8 Mo	8 Mo	8 Sa	8 Do	8 Di
9 Sa	9 Di	9 Di	9 Fr	9 Sonntag	9 Mi
10 Sonntag	10 Mi	10 Mi	10 Sa	10 Mo 19	10 Do
11 Mo 2	11 Do	11 Do	11 Sonntag	11 Di	11 Fr
12 Di	12 Fr	12 Fr	12 Mo 15	12 Mi	12 Sa
13 Mi	13 Sa	13 Sa	13 Di	13 Christi Himmelfahrt ☼☼☼	13 Sonntag
14 Do	14 Sonntag	14 Sonntag	14 Mi	14 Fr	14 Mo 24
15 Fr	15 Mo 7	15 Mo 11	15 Do	15 Sa	15 Di
16 Sa	16 Fastnacht	16 Di	16 Fr	16 Sonntag	16 Mi
17 Sonntag	17 Mi	17 Mi	17 Sa	17 Mo 20	17 Do
18 Mo 3	18 Do	18 Do	18 So	18 Di	18 Fr
19 Di	19 Fr	19 Fr	19 Mo 16	19 Mi	19 Sa
20 Mi	20 Sa	20 Sa	20 Do	20 Do	20 Sonntag
21 Do	21 Sonntag	21 Sonntag	21 Fr	21 Fr	21 Mo 25
22 Fr	22 Mo 8	22 Mo 12	22 Do	22 Sa	22 Di
23 Sa	23 Di	23 Di	23 Fr	23 Pfingstsonntag ☼	23 Mi
24 Sonntag	24 Mi	24 Mi	24 Sa	24 Pfingstmontag ☼☼(z.T.) 21	24 Do
25 Mo 4	25 Do	25 Do	25 So	25 Di	25 Fr
26 Di	26 Fr	26 Fr	26 Mo 17	26 Mi	26 Sa
27 Mi	27 Sa	27 Sa	27 Di	27 Do	27 Sonntag
28 Do	28 Sonntag	28 Sonntag	28 Mi	28 Fr	28 Mo 26
29 Fr		29 Mo 13	29 Do	29 Sa	29 Di
30 Sa		30 Di	30 Fr	30 Sonntag	30 Mi
31 Sonntag 19/20 AT		31 Mi 23 AT		31 Mo 19 AT 22	
					21/22 AT

Schedule & Plans for Commissioning Run

K.T. Knöpfle
 MPI Kernphysik, Heidelberg
 ktkno@mpi-hd.mpg.de
 GERDA Collaboration Meeting at LNGS
 1 – 3 March 2010

- update weekly schedule
- options for technical / commissioning run
- run team

2010 month	jan		february					march					apr												
calendar week	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18										
task / day	28	30	1	3	5	8	10	12	15	17	19	22	24	26	1	8	15	22	29	6	12	19	26	3	
lock																									
ship to LNGS					X																				
install it in cleanroom																									
isolating flange delivery																									
SMA feedthru flange del/rdy																									
install ext. gas system																									
@ cleanroom																									
clean it	✓																								
mount cluster flange/shutters																									
mount clean bench																									
mount 2nd c-lock support																									
install int gas system																									
install int vacuum system																									
mini UHV shutters del/inst																									
install 1/3 source mechanics																									
replace blue support bars																									
tests																									
source mechanics in HdM	✓																								
He leak test lock																									
lock mechanics																									
Rn emanation monitor																									
Rn emanation lock																									
insert dummy detector																									

update of 24 feb / 1 mar 2010

2010 month	jan				february								march					apr								
calendar week	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
task / day	27	29	1	3	5	8	10	12	15	17	19	22	24	26	1	8	15	22	29	6	12	19	26	3		
@ e-cabinet																										
Install racks	✓																									
install cooling & power			X				✓																			
fix cable length							✓																			
route cables lock - e-cabinet												X														
install/ test electronics																										
install/ test DAQ																										
slow control																										
complete hardware integration																										
WT drainage																										
pneumatic actuators delivery			X					✓																		
dto installation / test																										
3 rd flow rate test, w Ø110 diaphragma							✓																			
8m flow rate test w Ø110 diaphragma																										
new flow regulator delivery			X																							
DN65 flow regulator deliveries																										
test of DN65 regulators																										
pipes/flow meter re-installed/tested																										
misc																										
control room furnitures/PC																										
roots pump electrical inst																										
c-lock PLC installation																										

update of 24 feb / 1 mar 2010

Open issues:

immediate

filling of WT – linked to WT drainage
delivery of c-lock arm for 1x 3-diode string
muon veto commissioning

close to immediate

delivery of 2nd arm of c-lock for 3 x 3-diode string operation

Goal of commissioning run:

set up and test c-lock for single string - do muon veto commissioning in parallel
install diode(s), test electronics, DAQ, and calibration procedures,
get first information about background
gain experience for operation of 3x3-diode string with enriched Ge diodes

How to proceed in detail – various options:

obvious steps

mechanical test with weight – ist-soll comparison
electrical test with capacitor
He leak test
cleaning of glove box (& LAr surface?)
tests with prototype & cap

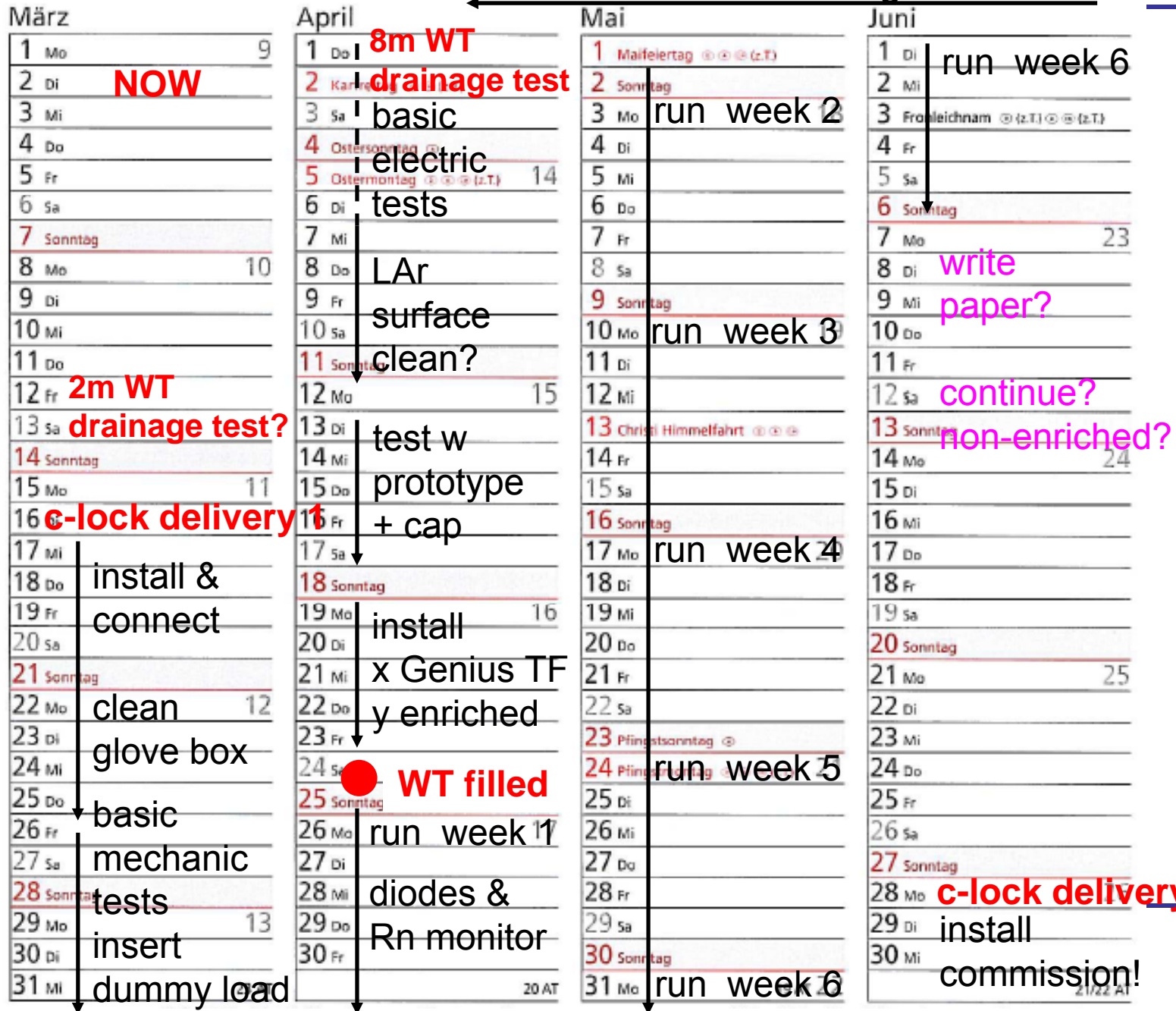
to be optimized

Rn assay of c-lock arm - when and how long?
How many Genius TF diodes to be immersed?
Any enriched diode?

develop / produce **3x3-diode string** c-lock arm

muon veto commissioning

schedule v0



PAPER: realistic goal? - Would be nice support for funding requests....

1) RESULT ON BACKGROUND INDEX (BI) ABOVE 1900 keV:

Assume BI of 0.1 resp 0.01 cts per (kg keV y) in RoI of ~2000 – 2600+ keV,
exposure $m \times t = 6 \text{ kg} \times 0.1 \text{ y}$ (non-enriched)

► expect 36 resp 3.6 counts in RoI (a bit too optimistic, perhaps rather 25 and 2.5)!

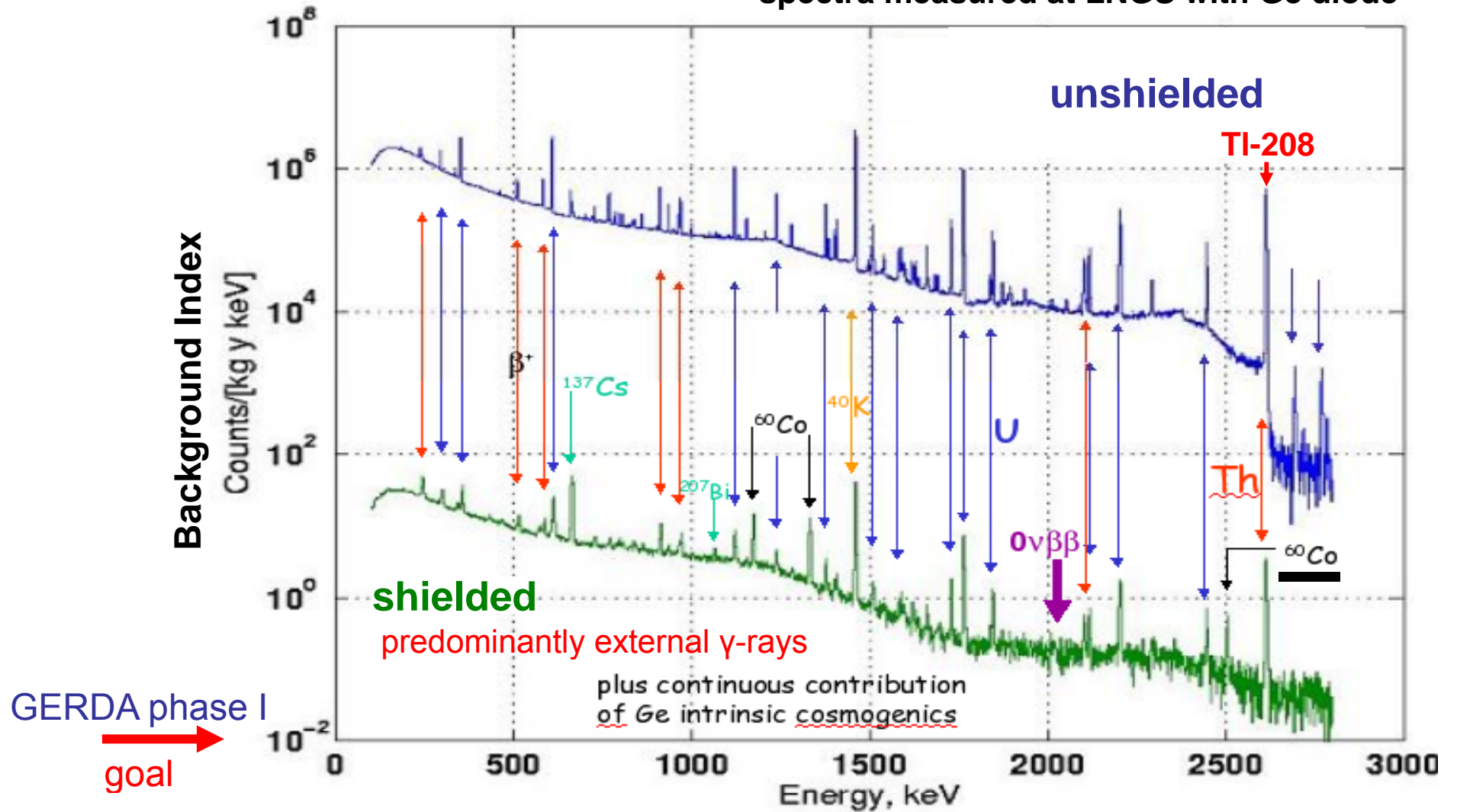
2) RESULT FOR $2\nu 2\beta$ BACKGROUND BELOW 1900 keV:

If BI ~ 0.01 , nice comparison of DBD spectrum of enriched & natural Ge diode!
 $2\nu 2\beta$ background will dominates – factor 10 larger in case of Ge-76!
($6 \times 10^{23} \times 0.1 / 10^{21} = 60$ per mol Ge-76 and per 0.1 year).

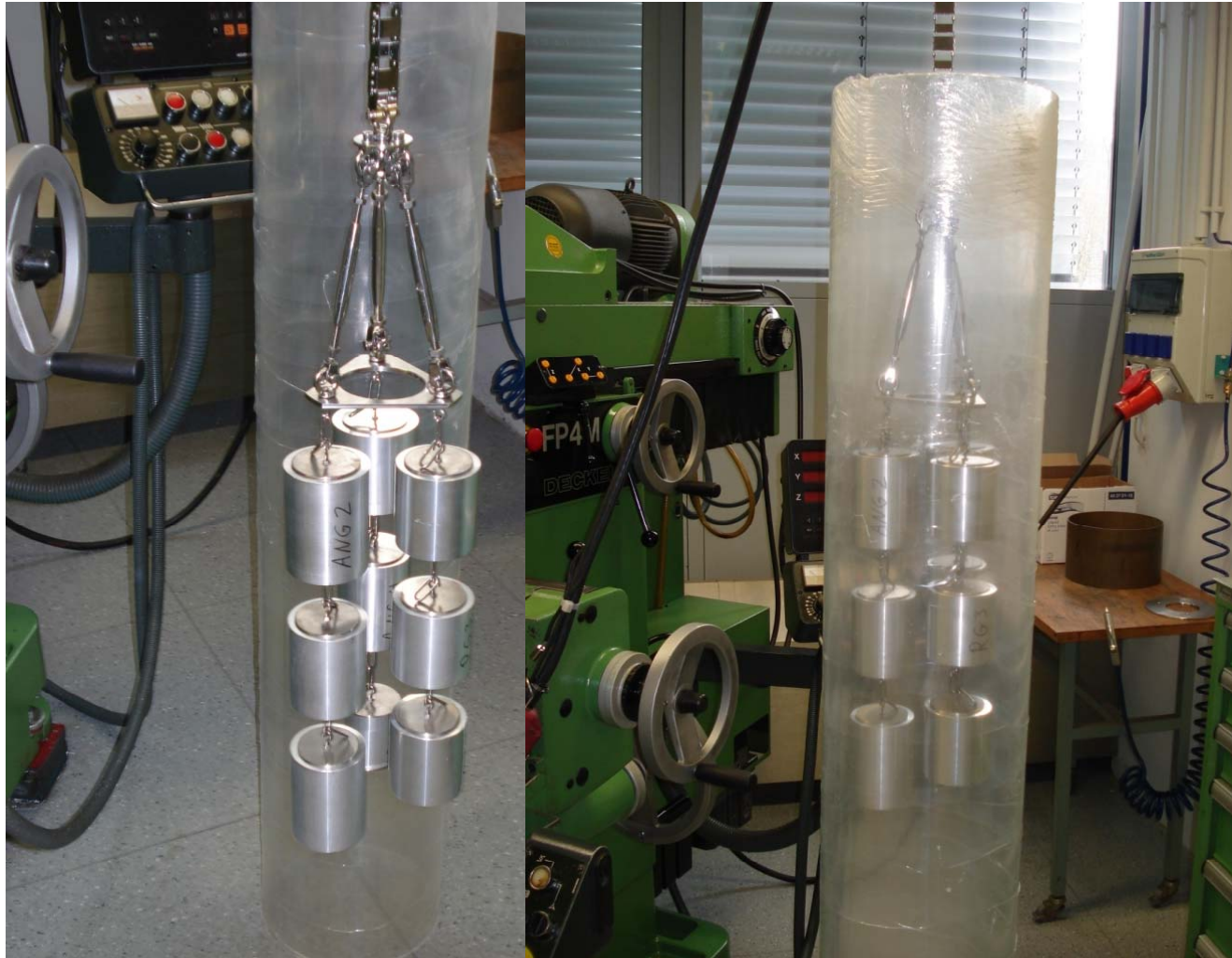
3) LIMITS FOR KNOWN LINES i.e. LIMITS on CONTAMINATIONS:

measured spectra

spectra measured at LNGS with Ge diode



3x3 string



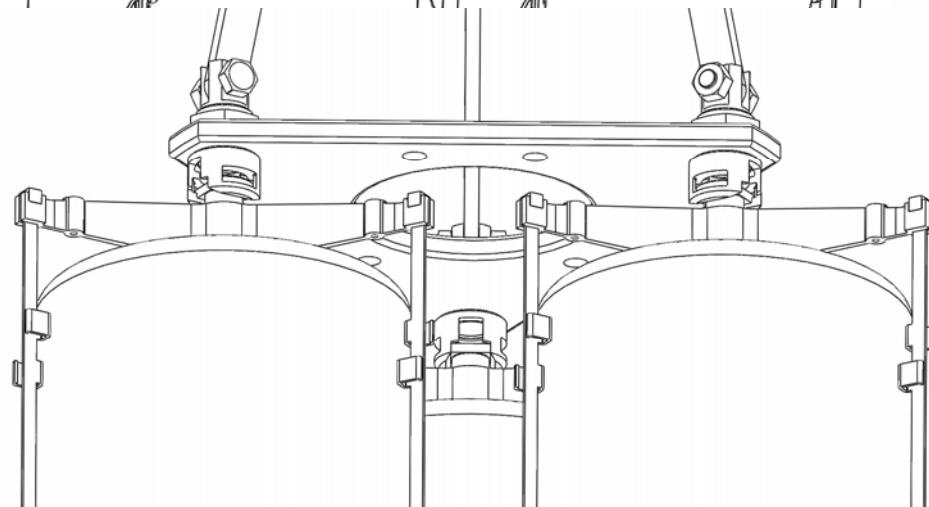
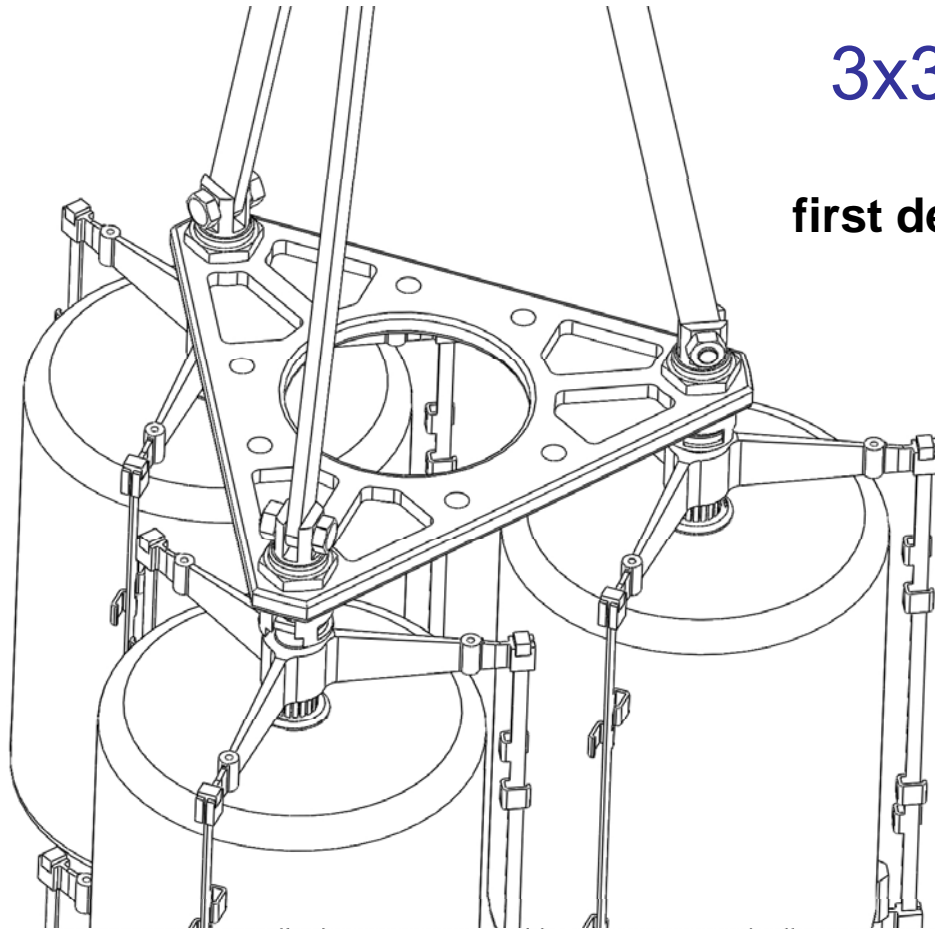
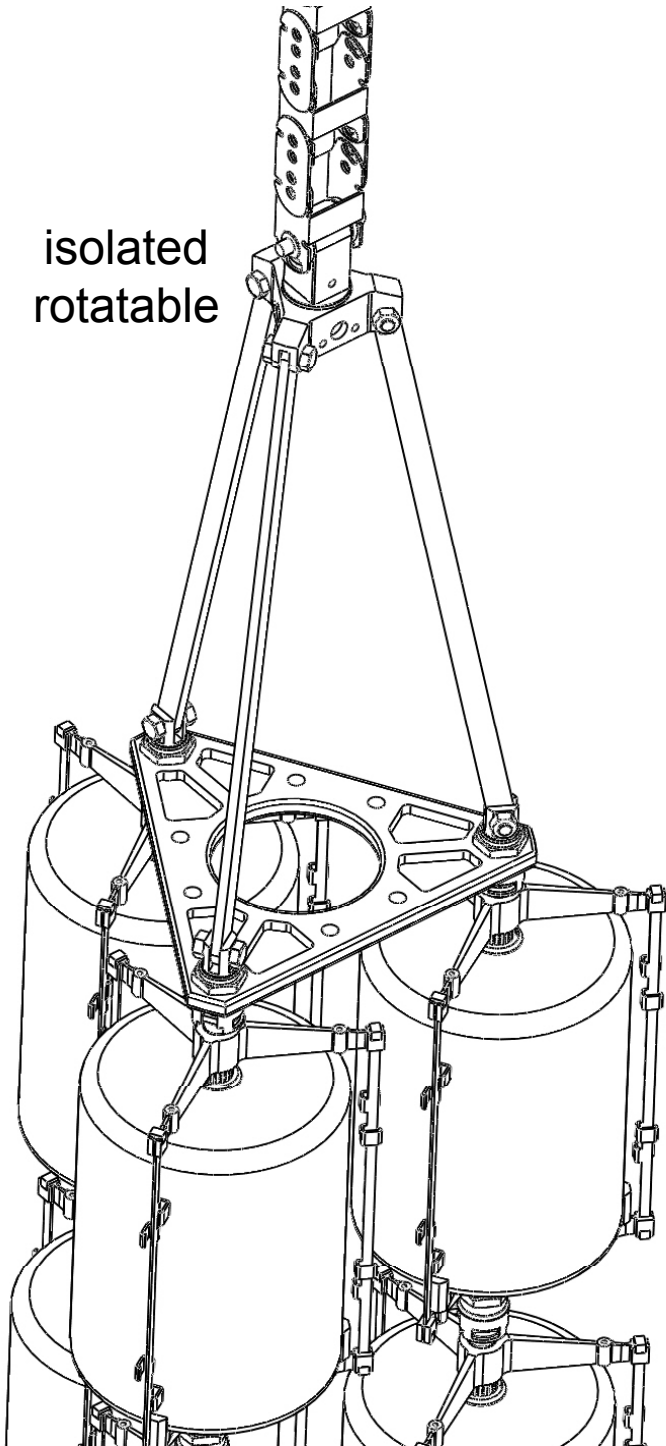
test setup with
strings of rather
different weights

► no strong deflections

3x3 string

first design study

isolated
rotatable



To Do List

provide 2nd DN250 shutter - **done**

replace motor & safety clutch

replace cable drum

provide feed thrus, isolation flange, cables

run 30+ cables in energy chain

provide DN150-DN250 interface

provide two DN250 tubes, one with bellow to modify length

design mounting sequence - **started**

design & provide mount/support for 3 strings incl. front end - **started**

GOAL: get it delivered by end of June!

We need to establish a run team* within a few weeks!

* difference shifter – run team:

- shifter: changing - sometimes present
- run team: fixed - always present

the end
