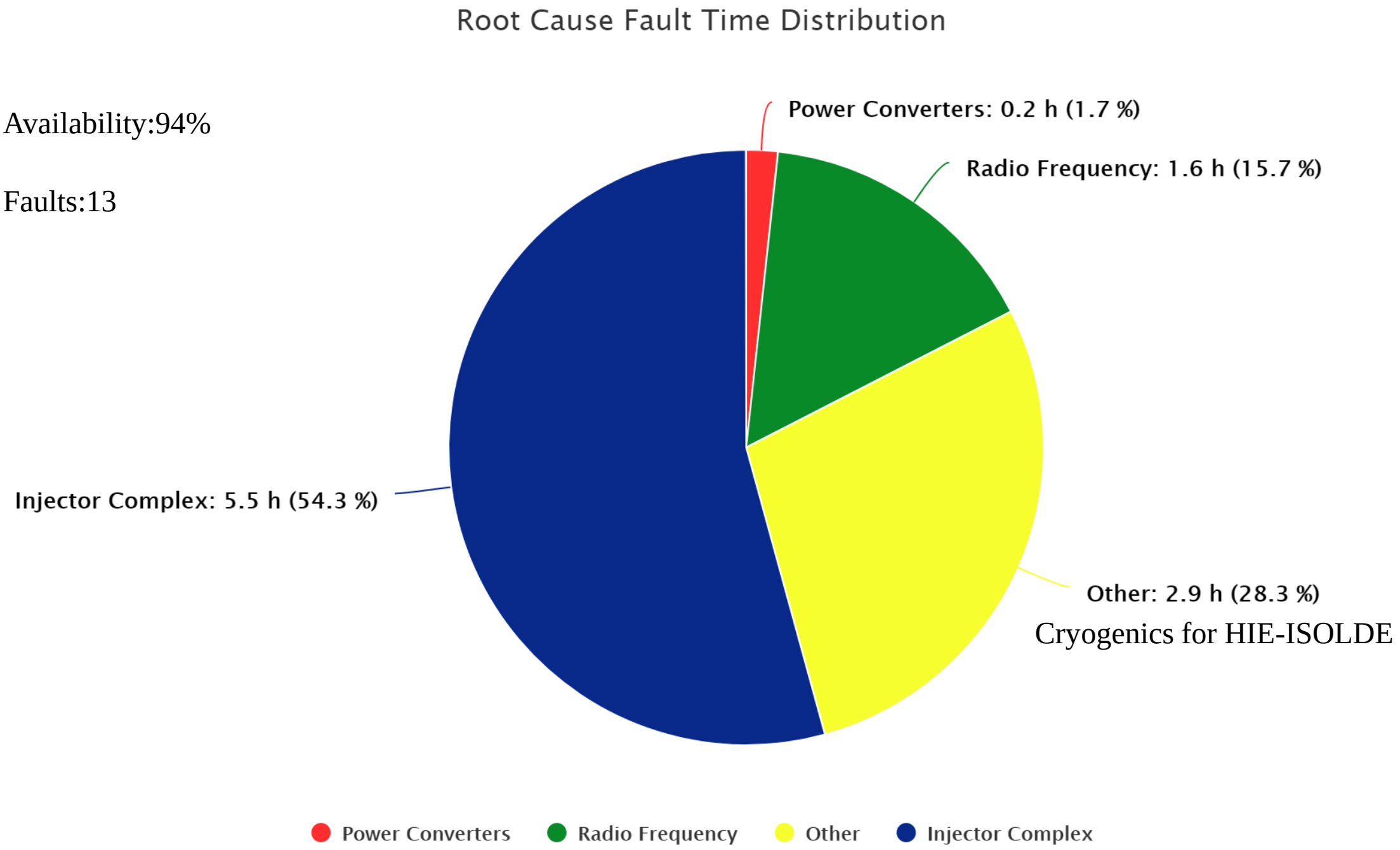
ISOLDE FOM Report on week 32

Lefteris Fadakis

Availability:94%

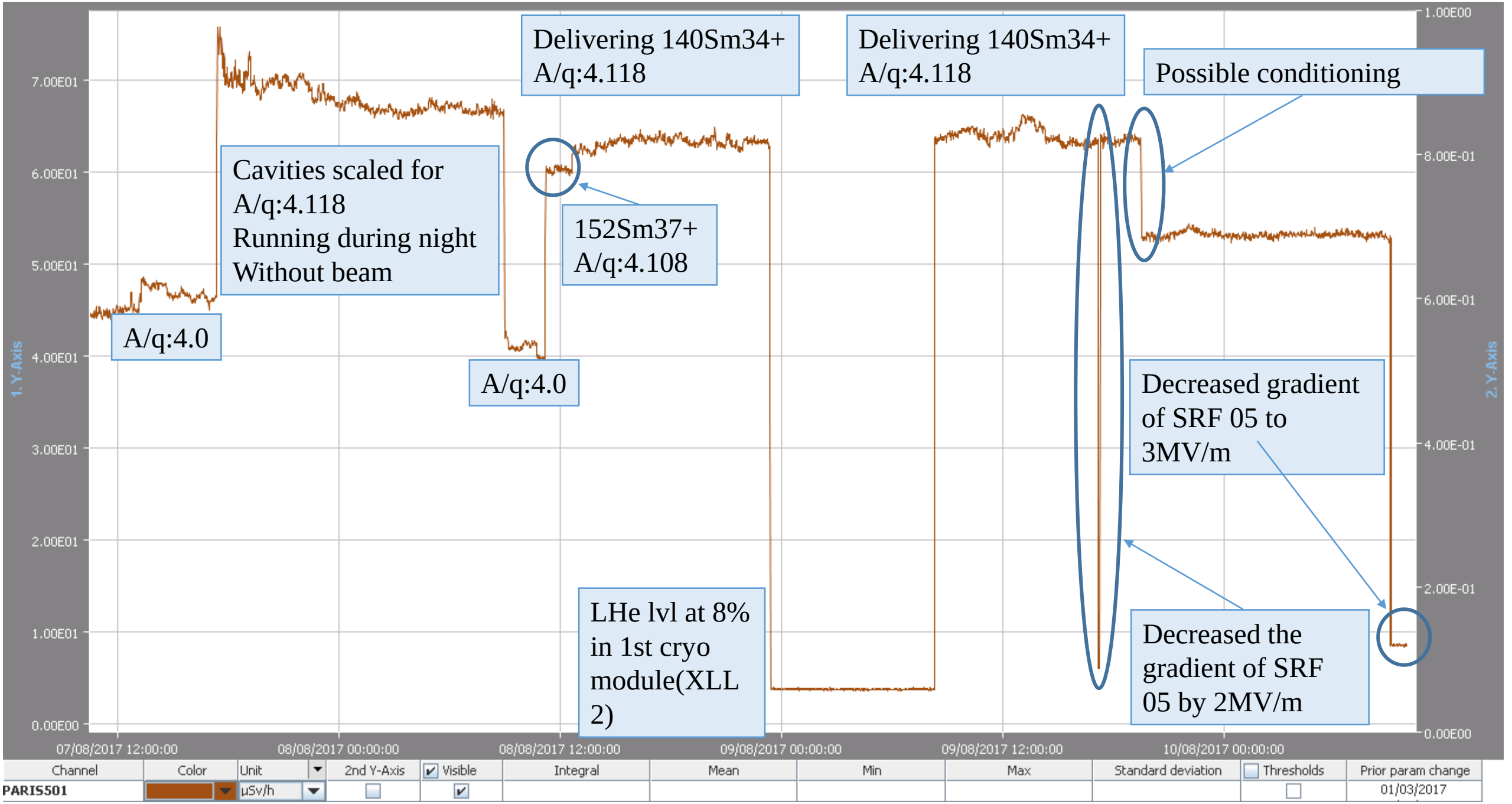
Faults:13

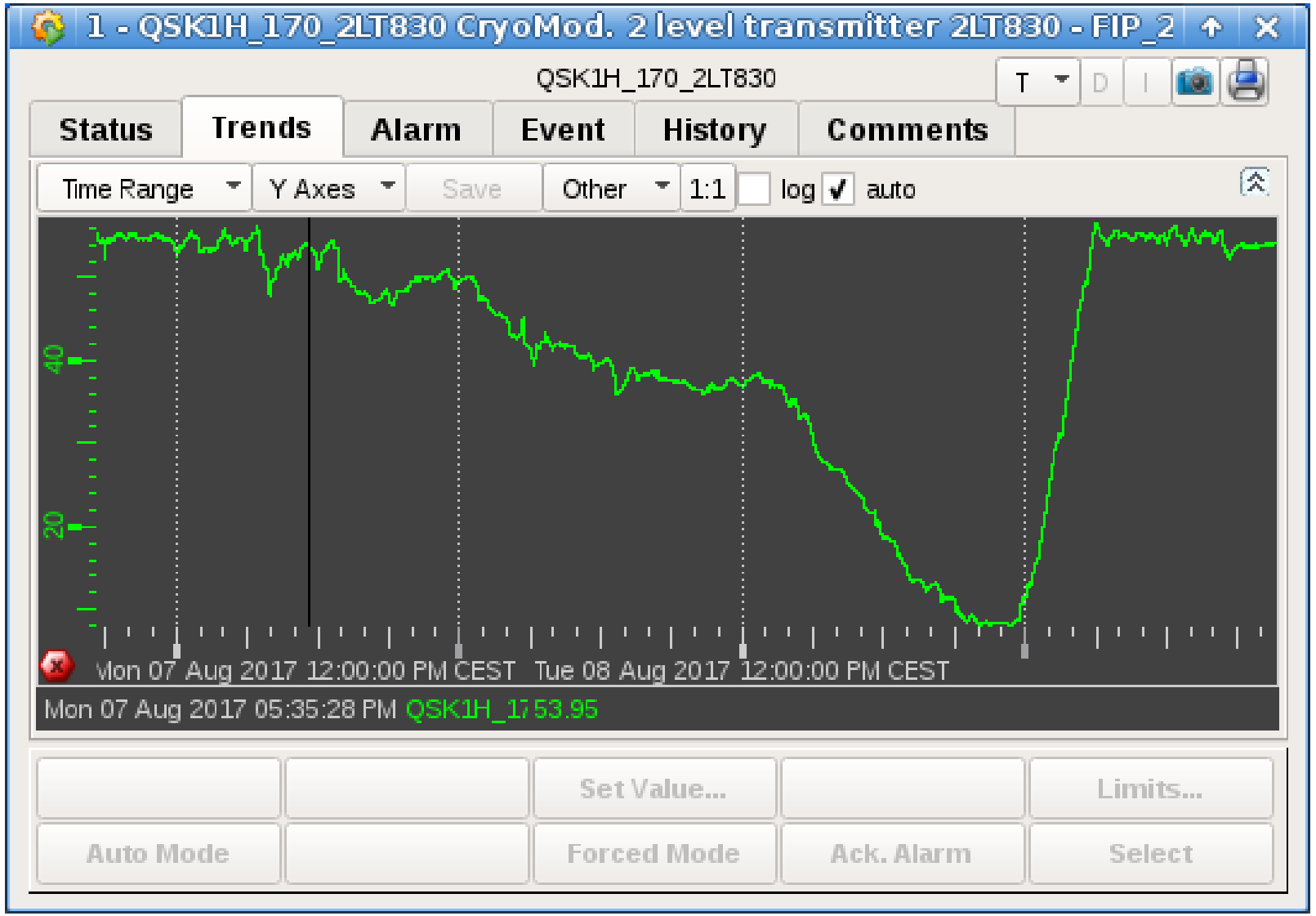


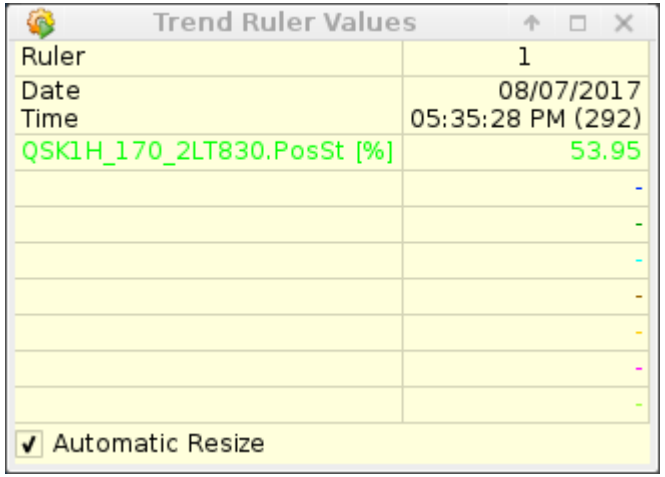
Cryogenics for HIE-ISOLDE

LHe level drop in cryo module 1 (XLL2)

A Series Of Unfortunate events


Delivering 140Sm34+
A/q:4.118
Delivering 140Sm34+
A/q:4.118
Possible conditioning
Cavities scaled for
A/q:4.118
Running during night
Without beam
152Sm37+
A/q:4.108
A/q:4.0
A/q:4.0
Decreased gradient
of SRF 05 to
3MV/m
LHe lvl at 8%
in 1st cryo
module(XLL
2)
Decreased the
gradient of SRF
05 by 2MV/m
1. Y-Axis
2. Y-Axis
7.00E01
6.00E01
5.00E01
4.00E01
3.00E01
2.00E01
1.00E01
0.00E00
1.00E00
8.00E-01
6.00E-01
4.00E-01
2.00E-01
0.00E00
07/08/2017 12:00:00
08/08/2017 00:00:00
08/08/2017 12:00:00
09/08/2017 00:00:00
09/08/2017 12:00:00
10/08/2017 00:00:00
Channel
Color
Unit
2nd Y-Axis
Visible
Integral
Mean
Min
Max
Standard deviation
Thresholds
Prior param change
PARIS501
µSv/h
01/03/2017


1 - QSK1H_170_2LT830 CryoMod. 2 level transmitter 2LT830 - FIP_2
QSK1H_170_2LT830
T
D
I
Status
Trends
Alarm
Event
History
Comments
Time Range
Y Axes
Save
Other
1:1
log
auto
40
20
Mon 07 Aug 2017 12:00:00 PM CEST
Tue 08 Aug 2017 12:00:00 PM CEST
Mon 07 Aug 2017 05:35:28 PM QSK1H_17 53.95
Set Value...
Limits...
Auto Mode
Forced Mode
Ack. Alarm
Select


Trend Ruler Values
Ruler
1
Date
08/07/2017
Time
05:35:28 PM (292)
QSK1H_170_2LT830.PosSt [%]
53.95
Automatic Resize

Issue:

1. LHe is supplied by a main valve (2CV960) which is fixed so that the pressure and cold box is stabilized
by limiting the available flow.
On Monday, we very slightly increased the field of SRF05 , which changed the power dissipation in the CM by only ~3-4W.
Due to the strict margin of the valve the system could not provide enough cooling power.

2. No one realised the dropping level of LHe until it reached 8% and the LLRF amplifier interlock kicked in.

Solution:
1. Cryogenic operators adjusted the upper limit of the main valve 2CV960 from 33% to 36% to increase the margin of regulation.

2. They corrected the issue with the alarm of the LHe level which was not working at the time.

- Apart from the issues stated above we are glad to mention that we delivered beam ahead of schedule.
- According to our physics coordinator, for this year, this was the first fully completed experiment for HIE-ISOLDE.