iLILI
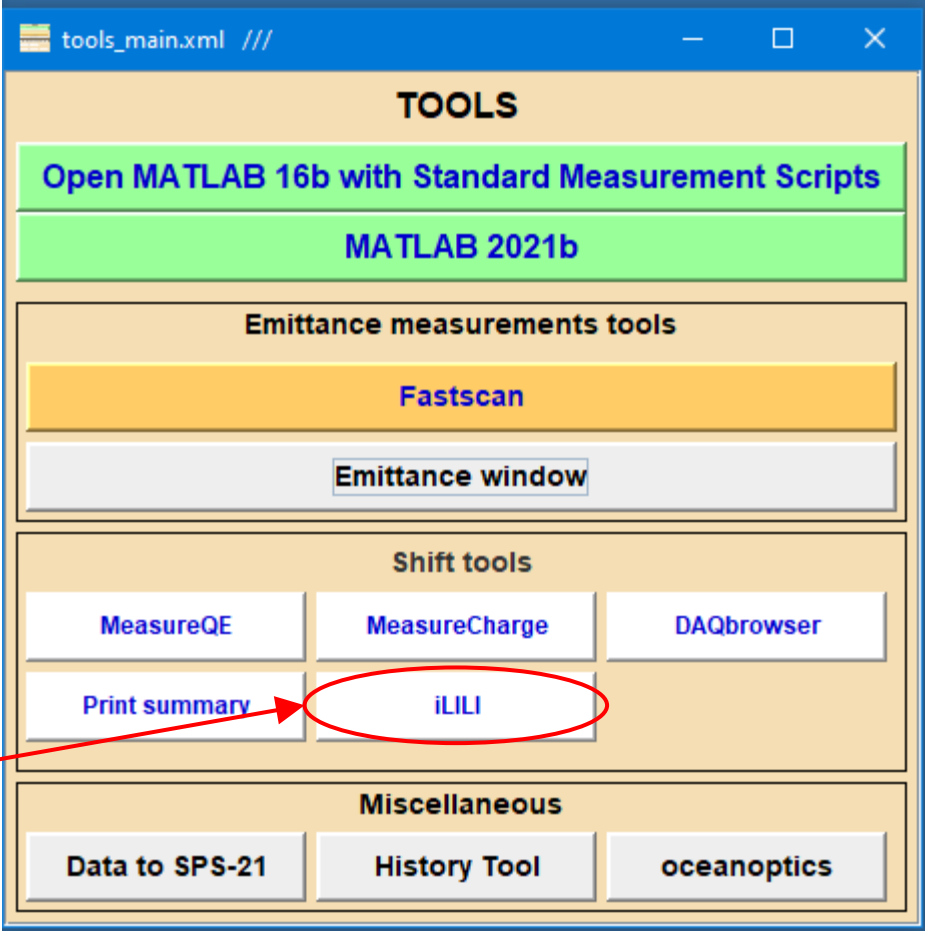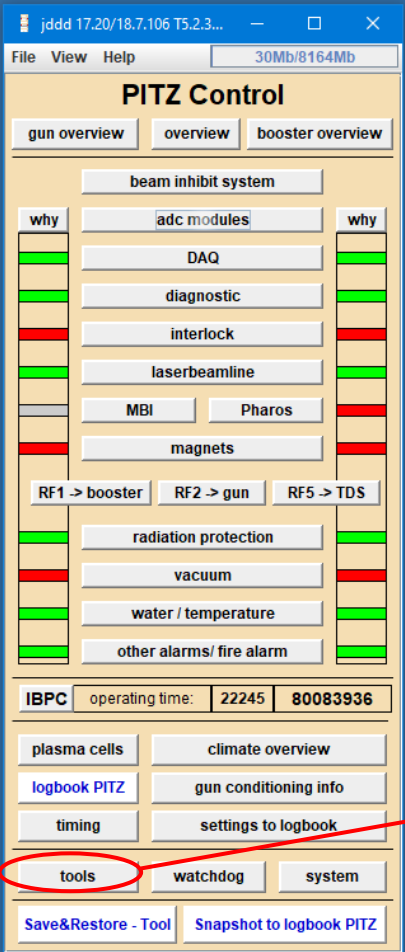
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Introduction

iLILI is a tool to analyze signals from the IL sensors a the time of the interlock. The tool can be started from PITZ JDDD GUI. At the moment, only Linux is supported.
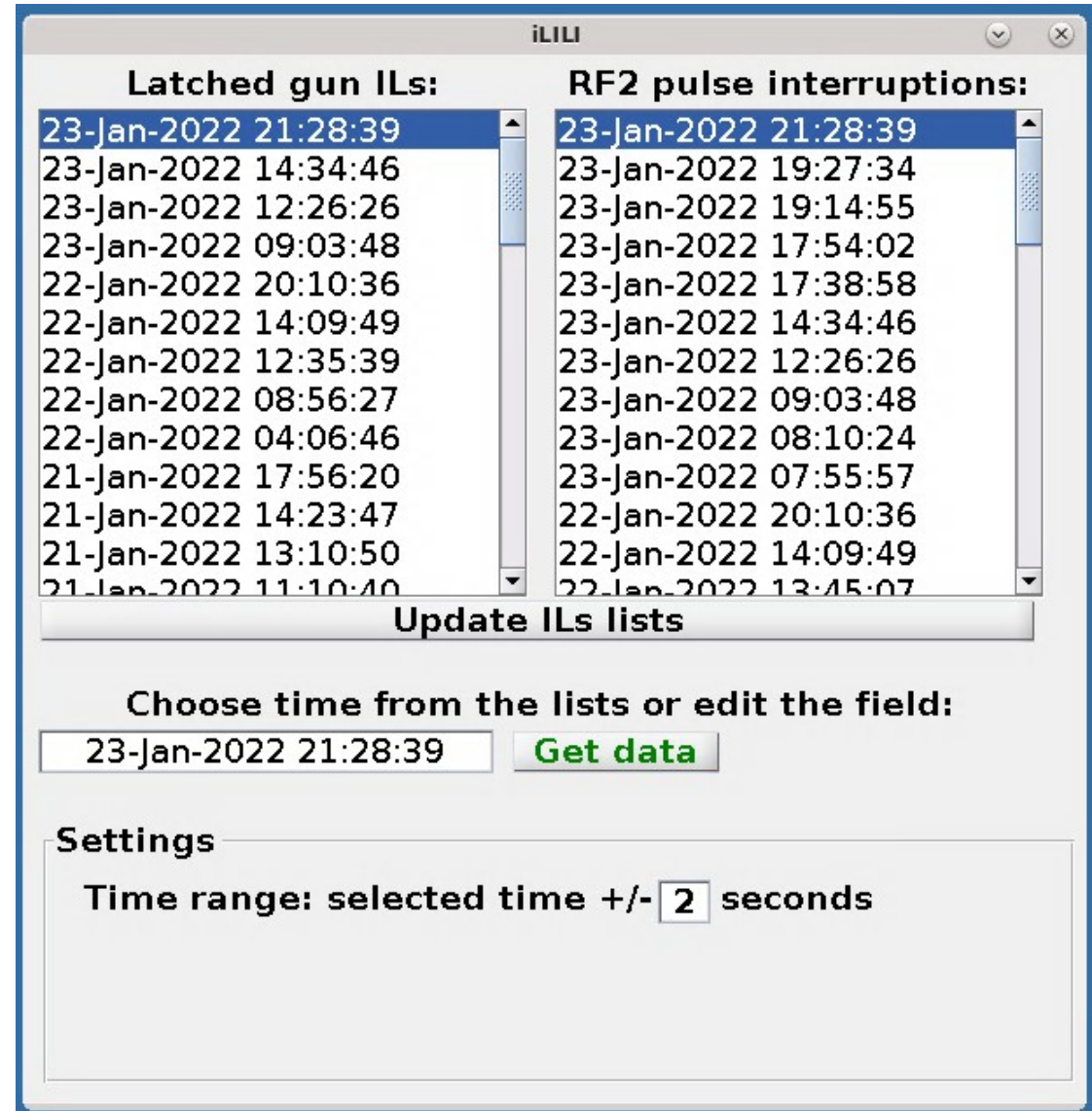
Main window

There two lists of ILs: gun interlocks and RF2 interlocks which help the operator to set the date/time for processing in the edit field below.

At the program start, most recent interlock from the gun IL list is set to the edit field. If wanted, date/time can be given manually in the edit field.

IL lists can be updated by pressing the corresponding button

The "Settings" field allows to change the time span around the event time, typically, 2 seconds (default) are enough

Finally, data processing starts with "Get data button" and typically takes about a minute or so

iLILI

Latched gun ILs:	RF2 pulse interruptions:
23-Jan-2022 21:28:39	23-Jan-2022 21:28:39
23-Jan-2022 14:34:46	23-Jan-2022 19:27:34
23-Jan-2022 12:26:26	23-Jan-2022 19:14:55
23-Jan-2022 09:03:48	23-Jan-2022 17:54:02
22-Jan-2022 20:10:36	23-Jan-2022 17:38:58
22-Jan-2022 14:09:49	23-Jan-2022 14:34:46
22-Jan-2022 12:35:39	23-Jan-2022 12:26:26
22-Jan-2022 08:56:27	23-Jan-2022 09:03:48
22-Jan-2022 04:06:46	23-Jan-2022 08:10:24
21-Jan-2022 17:56:20	23-Jan-2022 07:55:57
21-Jan-2022 14:23:47	22-Jan-2022 20:10:36
21-Jan-2022 13:10:50	22-Jan-2022 14:09:49
21-Jan-2022 11:10:40	22-Jan-2022 13:45:07

Update ILs lists

Choose time from the lists or edit the field:

23-Jan-2022 21:28:39   Get data

**Settings**

Time range: selected time +/- 2 seconds

Result windows

The data obtained from DAQ is analyzed and tool looks for the pulse number at which power was dropped to zero. Tool plots signals for this pulse and three pulses before it – it is enough for the most ILs. Power and pulse length for each RF signal are calculated and will be printed to the logbook as table when the corresponding button is pressed (see next slides). The calculation is done within the margins which are set in RF2INFO server.

As there are a lot of sensors, data is split in two windows. The second window has extra control buttons (see next slide)
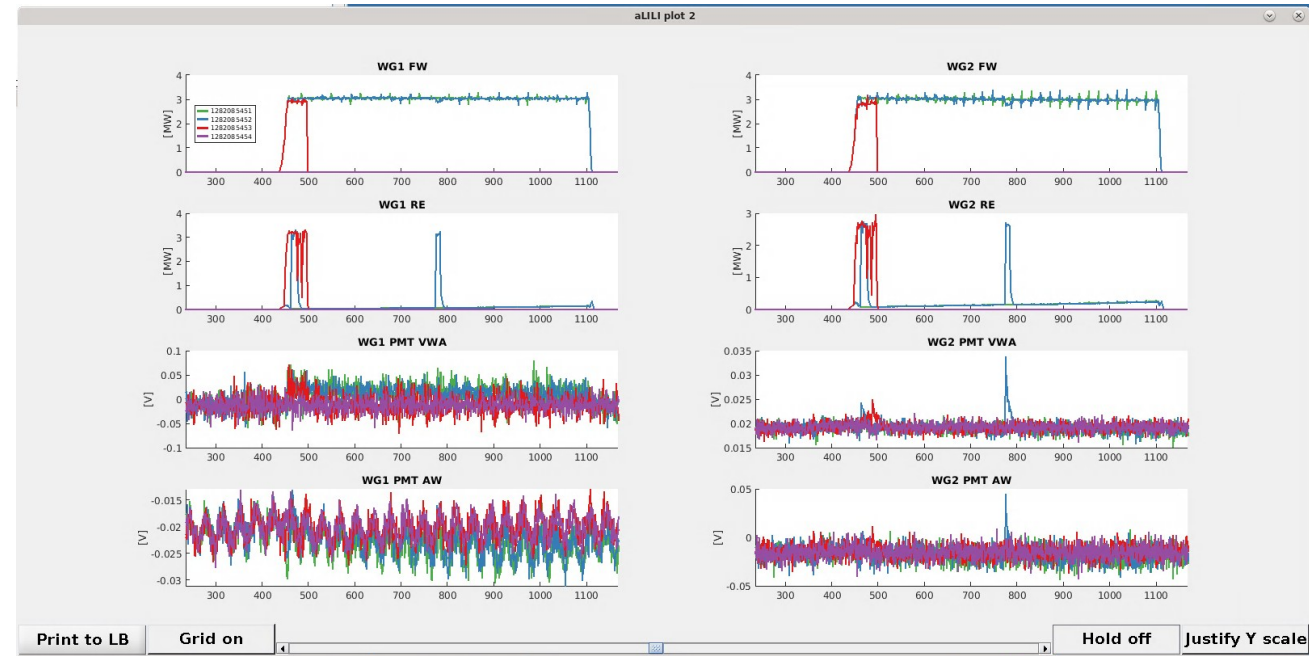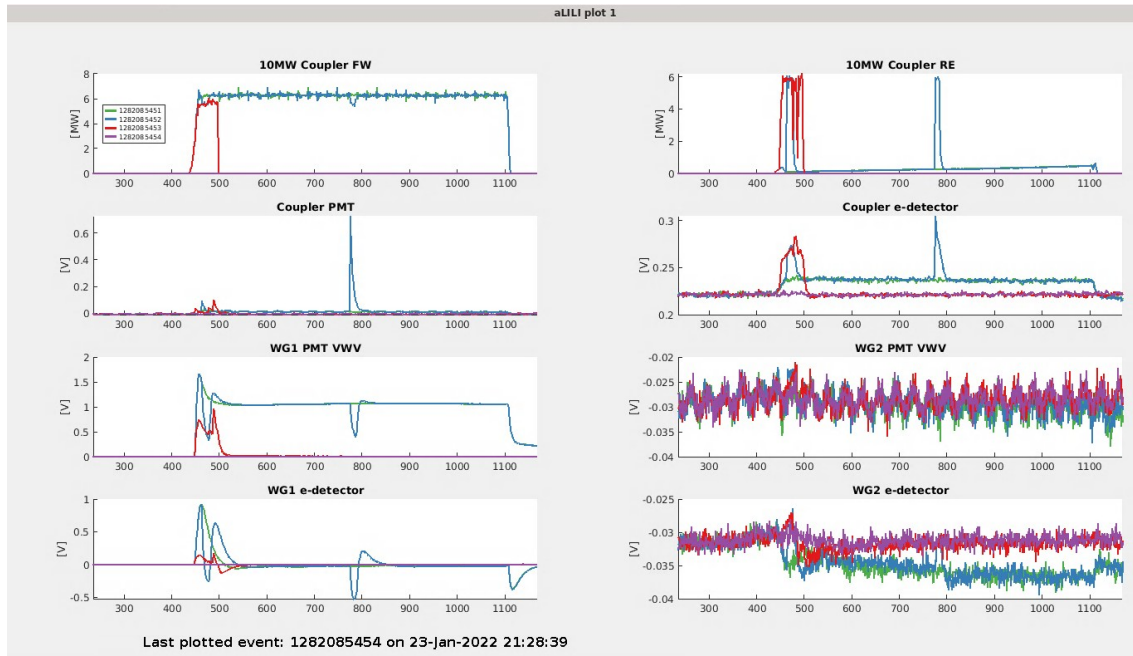
Control buttons

- "Jusitfy/Release Y scale" – takes maximum and minimum values from all traces at all PMT and e-detector plots and applies them (+10%) as Y axes limits to all plots. If applied, can be reverted by pressing the button again
- "Hold off/on" – holds/releases plots
- Slider – goes through events
- Grid on/off – enables/disables grid
- Print to LB – prints figures and data table (see next slide) to the PITZ e-logbook
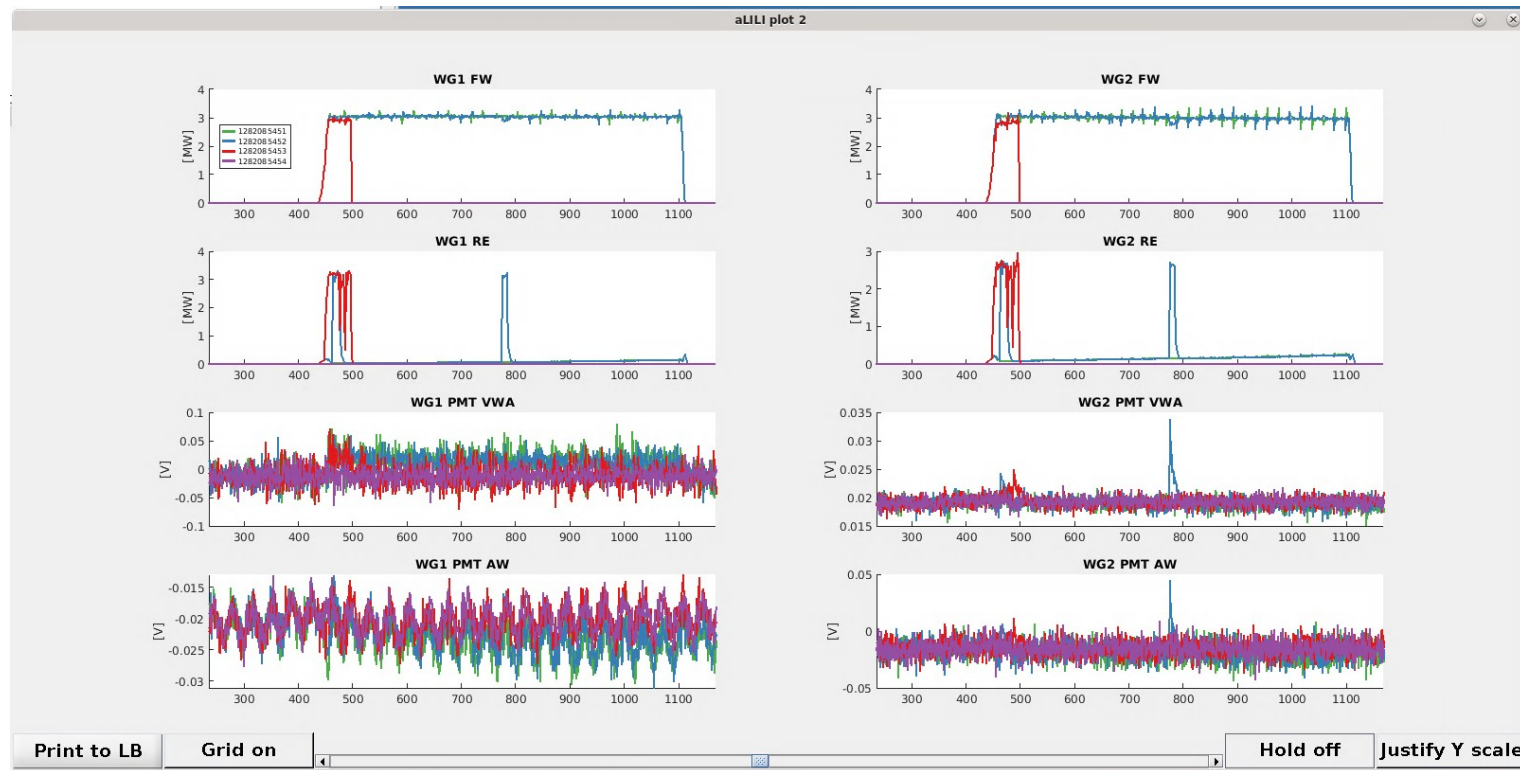
Data table in the PITZ e-logbook

When "Print to LB" button is used, not only figures but additional table is printed to the PITZ e-logbook. This table contains power level and pulse length for all RF2 signals, along with the event number

Last plotted event: 1282085454 on 23-Jan-2022 21:28:39

Event number	1282085451	1282085452	1282085453	1282085454
10MW Coupler FW	6.27MW@641us	6.24MW@641us	5.63MW@37us	NaNMW@0us
10MW Coupler RE	0.29MW@641us	0.51MW@641us	4.32MW@44us	NaNMW@0us
WG1 FW	3.05MW@641us	3.04MW@641us	2.92MW@37us	NaNMW@0us
WG1 RE	0.09MW@641us	0.21MW@641us	2.4MW@43us	NaNMW@0us
WG2 FW	3MW@641us	2.99MW@641us	2.83MW@37us	NaNMW@0us
WG2 RE	0.16MW@641us	0.26MW@641us	1.98MW@43us	NaNMW@0us