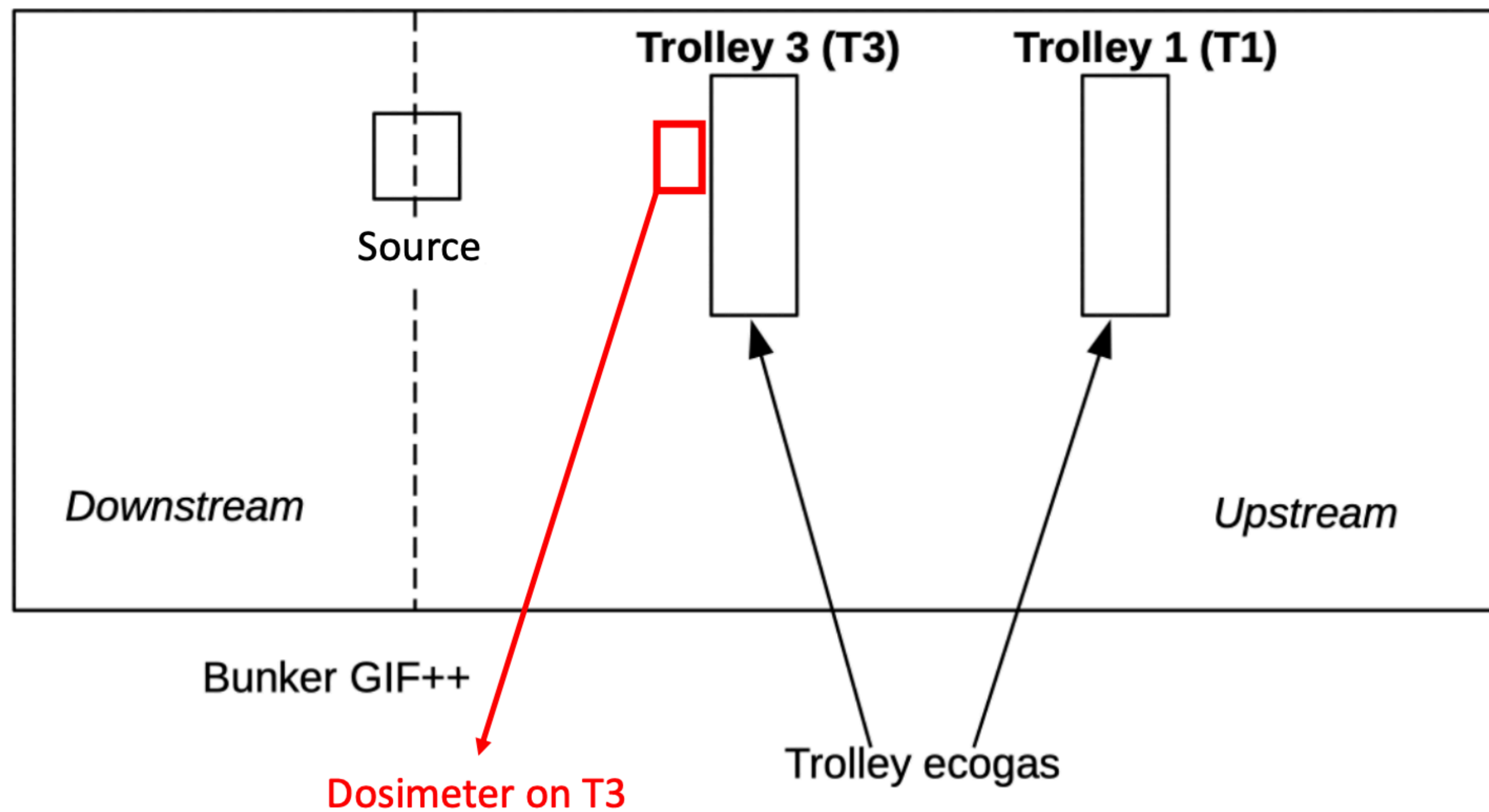




First integrated dose calculation

Marco Sessa
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Dose measurements



From Sara and Luca

https://agenda.infn.it/event/40237/contributions/224393/attachments/116881/168591/dose_GIF.pdf

Instantaneous dose measured with 2.2 attenuation filter (T3 position)

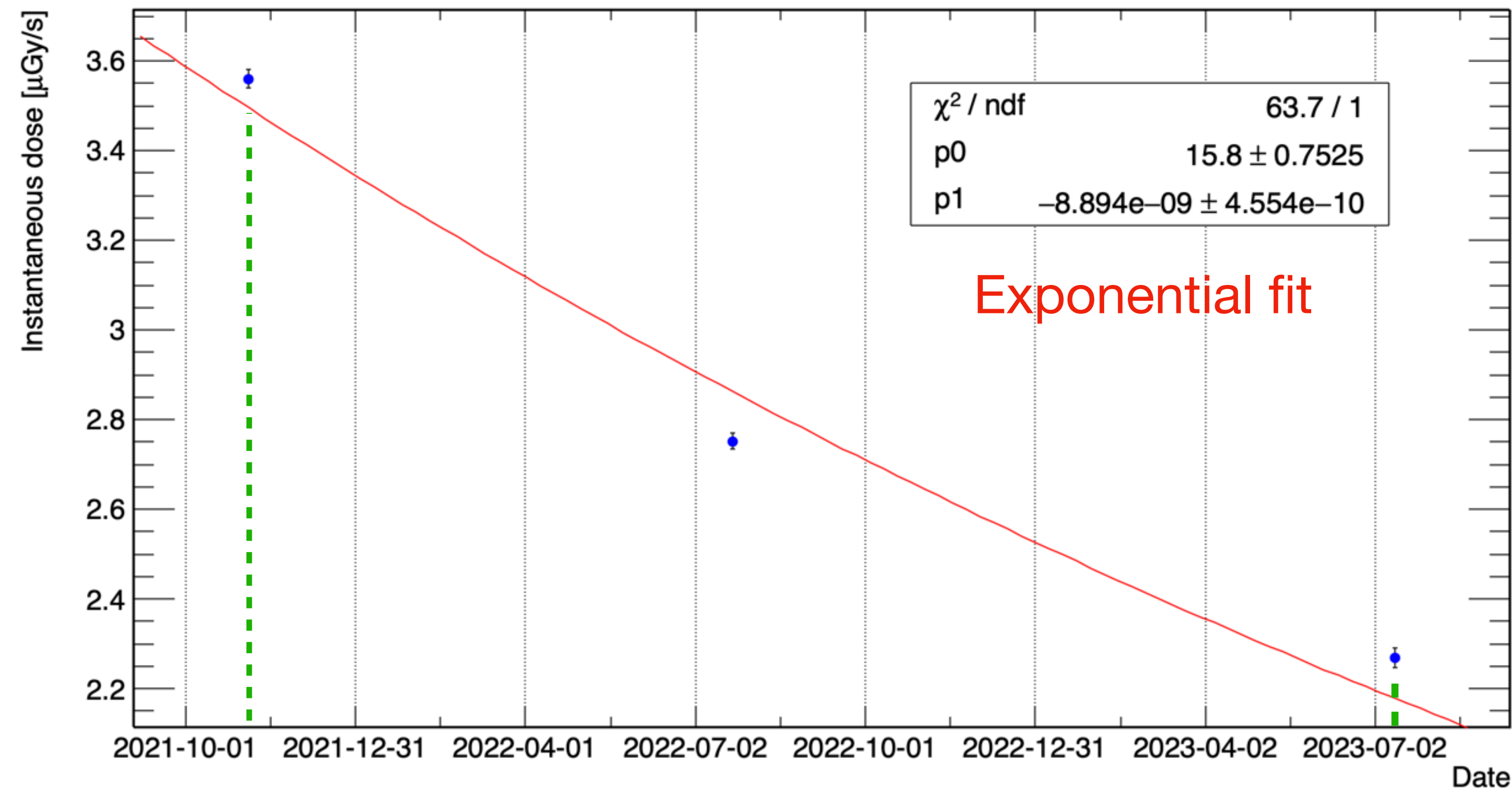
Three measurements available

4/11/2021 —> 12817 uGy/h —> 3.56 uGy/s

22/7/2022 —> 9907 uGy/h —> 2.75 uGy/s

13/7/2023 —> 8170 uGy/h —> 2.27 uGy/s

Period between 4/11/2021 and 13/7/2023 corresponds to
1.69 years
(53218800 seconds)



The integration limits (4/11/2021 and 13/7/2023) are converted into seconds (elapsed since 00:00 on January 1, 1970)

Integrated dose
148208741.27 uGy
148.21 Gy

Integrated dose (T3 position)

Integrated dose assuming the source is always ON and filter 2.2
148.21 Gy

30.07 Gy of dose not accumulated because source OFF
(to be subtracted from the 148.21 Gy)

Considering all the attenuation filters used
(1, 2.2, 4.6, 10, etc...)
The corrected integrated dose is **113.55 Gy**



Source status and attenuation
filters extracted from grafana in
steps of 1 day

Finer granularity?

🕒 Time	📊 Upstream attenuation	📊 Source on
2021-11-03 01:00:00	6.90	1
2021-11-04 01:00:00	2.20	1
2021-11-05 01:00:00	2.20	1
2021-11-06 01:00:00	2.20	1
2021-11-07 01:00:00	2.20	1
2021-11-08 01:00:00	2.20	1
2021-11-09 01:00:00	2.20	1
2021-11-10 01:00:00	22	0
2021-11-11 01:00:00	2.20	1
2021-11-12 01:00:00	1.50	0
2021-11-13 01:00:00	22	1
2021-11-14 01:00:00	46	1
2021-11-15 01:00:00	1	0

Cumulative dose in T3 position

