KLM Bubbler updates

KEK updates

Michele, Noah, Sayan, 8th November, 2023

4 pis collecting return side data

KLM Bubbler updates

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- Return side BB0,BB7,BF0,BF7 connected
- Power supply voltage adjusted
  - 5.06±0.01 V to 5.10±0.01 V
- Two readout boards connected to same power supply(pin based)
  - One that was already connected still shows undervoltage ~once every two minute
  - Other one doesn’t

Inventory of disconnected channels

KLM Bubbler updates

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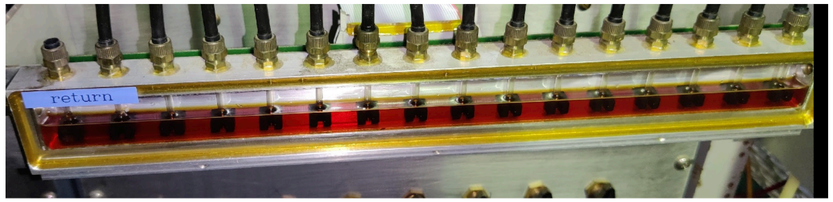
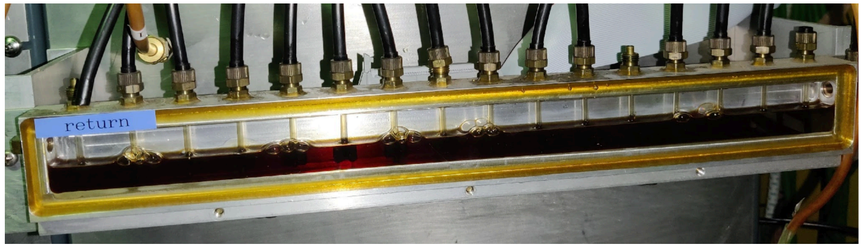
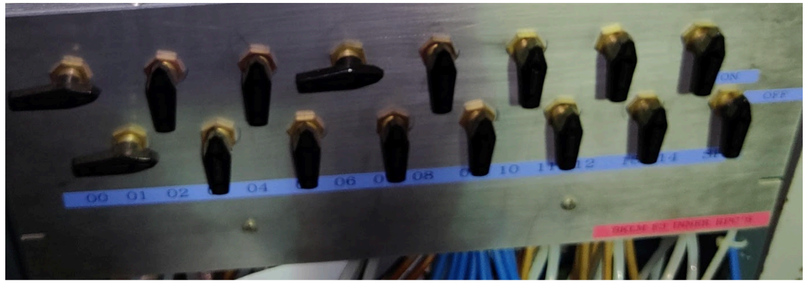
- Some bubblers(mostly 0,1,15) have no pipes connected
  - Not consistent, so taken inventory
- Some supply panels(mostly 0,1,15) have switches turned off
  - Not consistent, so taken inventory
- To make sure we see zero flowrates in readout of those channels







Flowrate histogram

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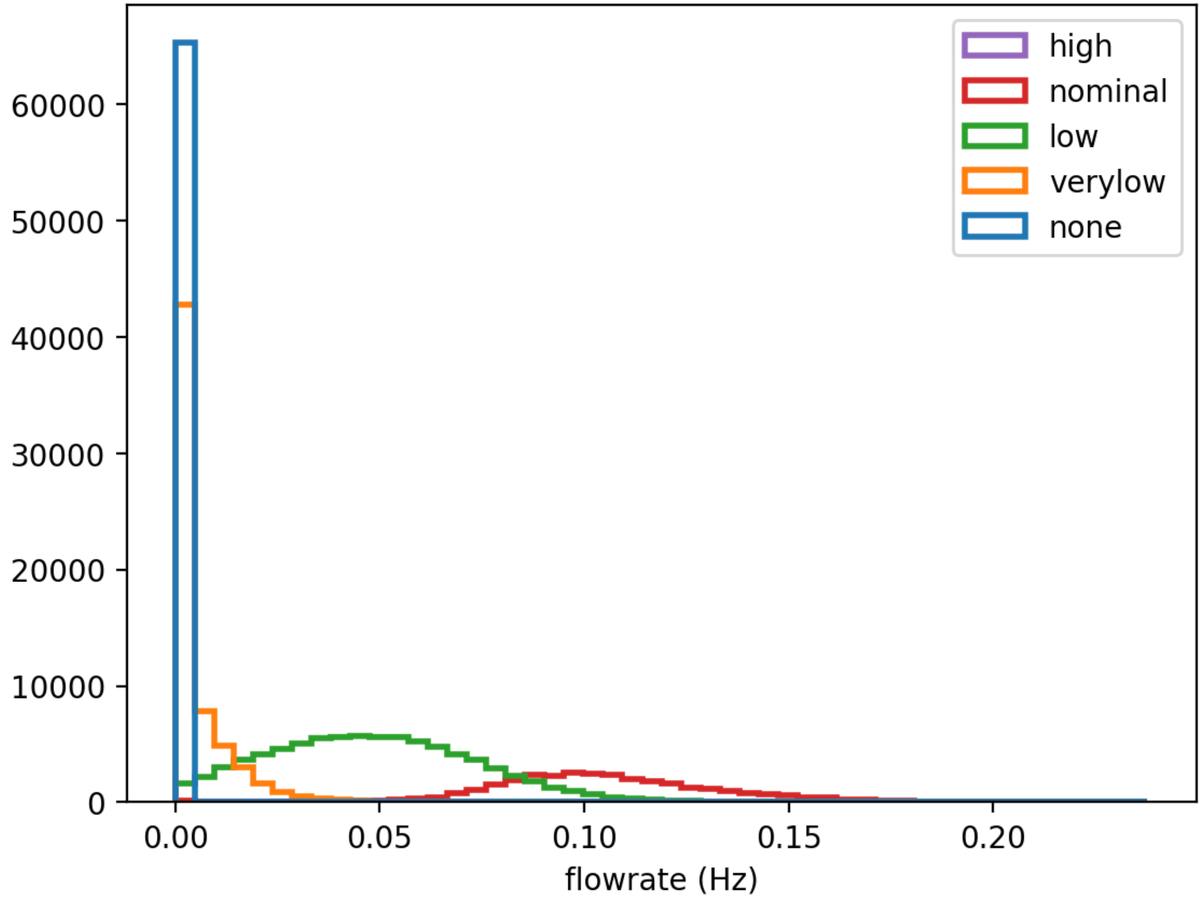
- Label channels based on average flowrate and plot histogram
  - None: no flow
  - Verylow: < ~1 bubble per minute
  - Low: < ~5 bubbles/min
  - Nominal: < ~12 bubbles/min
  - High: more than any of them
    - no channels recorded to have so



Flowrate histogram

KLM Bubbler updates

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BB3 inner return

```
/var/folders/65/343qx7n94rbgfxg4r242sff80000gr/T/ipykernel_6491/3218631040.py:5: FutureWarning: Styler.applymap
  display(dfs_tag[pi][spi].style.applymap(colour_cell))
```

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	verylow	low	verylow	low	low	none	none	none	low	nominal	none	nominal	low	none

BB4 inner return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	low	verylow	low	low	none	low	low	none	none	none	none	low	verylow	low	none

BB3 outer return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	nominal	low	low	nominal	verylow	low	low	low	low	low	nominal	low	verylow	none

BB4 outer return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	low	low	low	verylow	low	verylow	none	none	verylow	low	low	verylow	low	none

BF0 inner return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	verylow	verylow	low	low	low	nominal	nominal	nominal	low	nominal	low	low	verylow	none

BF7 inner return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	low	verylow	low	nominal	low	nominal	low	nominal	nominal	verylow	none	verylow	nominal	none

BF0 outer return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	low	low	verylow	nominal	low	low	verylow	nominal	low	low	nominal	none	none	none

BF7 outer return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	low	low	verylow	verylow	nominal	nominal	low	verylow	nominal	low	verylow	nominal	none	low

BB0 inner return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	nominal	nominal	verylow	verylow	nominal	low	nominal	nominal	nominal	low	nominal	low	low	none

BB7 inner return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	none	verylow	verylow	verylow	verylow	verylow	verylow	verylow	verylow	verylow	verylow	verylow	none	none

BB0 outer return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	nominal	nominal	nominal	nominal	low	verylow	low	verylow	verylow	verylow	verylow	verylow	verylow	none

BB7 outer return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	verylow	nominal	nominal	verylow	low	nominal	verylow	low	none	low	verylow	low	verylow	none

BF3 inner return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	verylow	verylow	verylow	verylow	none	verylow	verylow	verylow	verylow	verylow	verylow	verylow	verylow	verylow	none

BF4 inner return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	low	low	low	verylow	low	low	low	none	low	low	low	verylow	low	none

BF3 outer return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	low	none	low	none	low	low	low	low	low	low	none	verylow	low	none

BF4 outer return

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
tag	none	none	verylow	verylow	verylow	low	nominal	verylow	verylow	low	low	low	low	low	verylow	none

(Bubblers with no inflow pipe not subtracted)

Flowrate histogram

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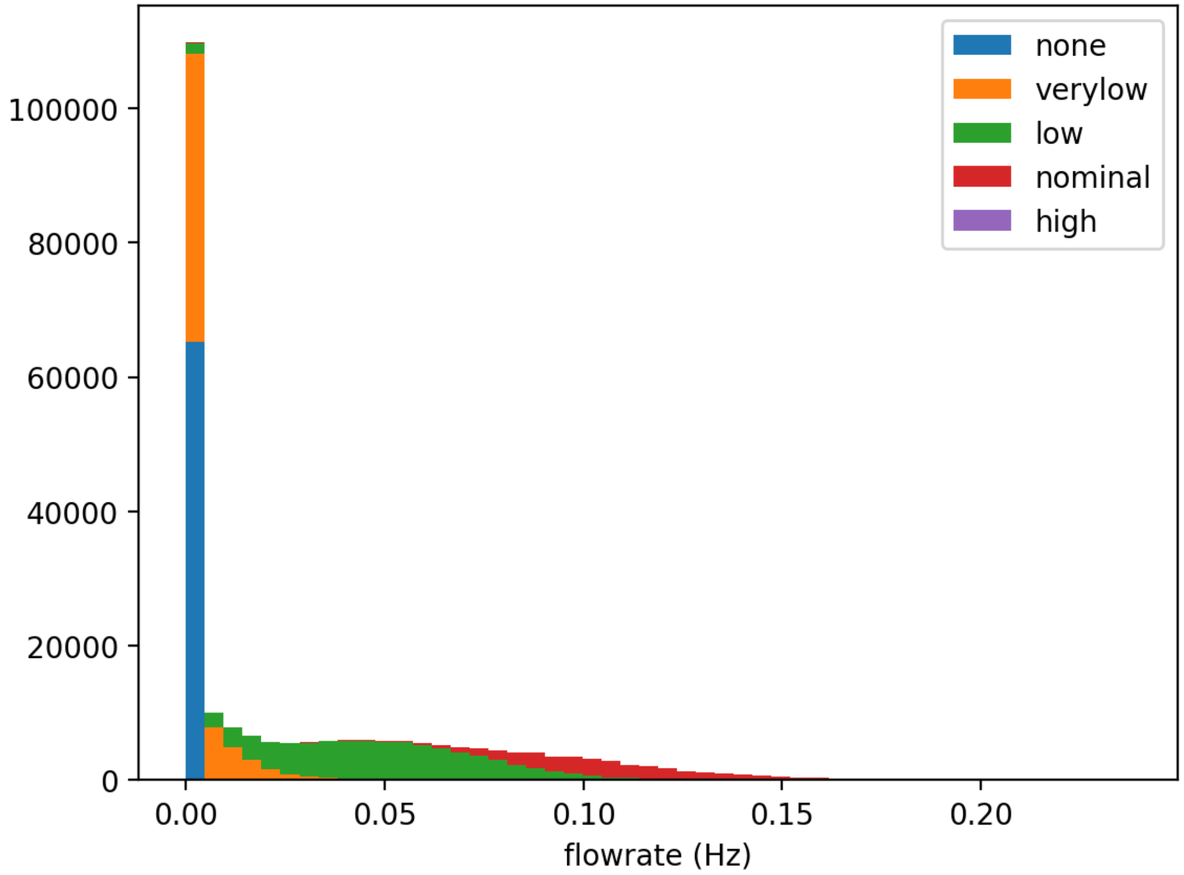

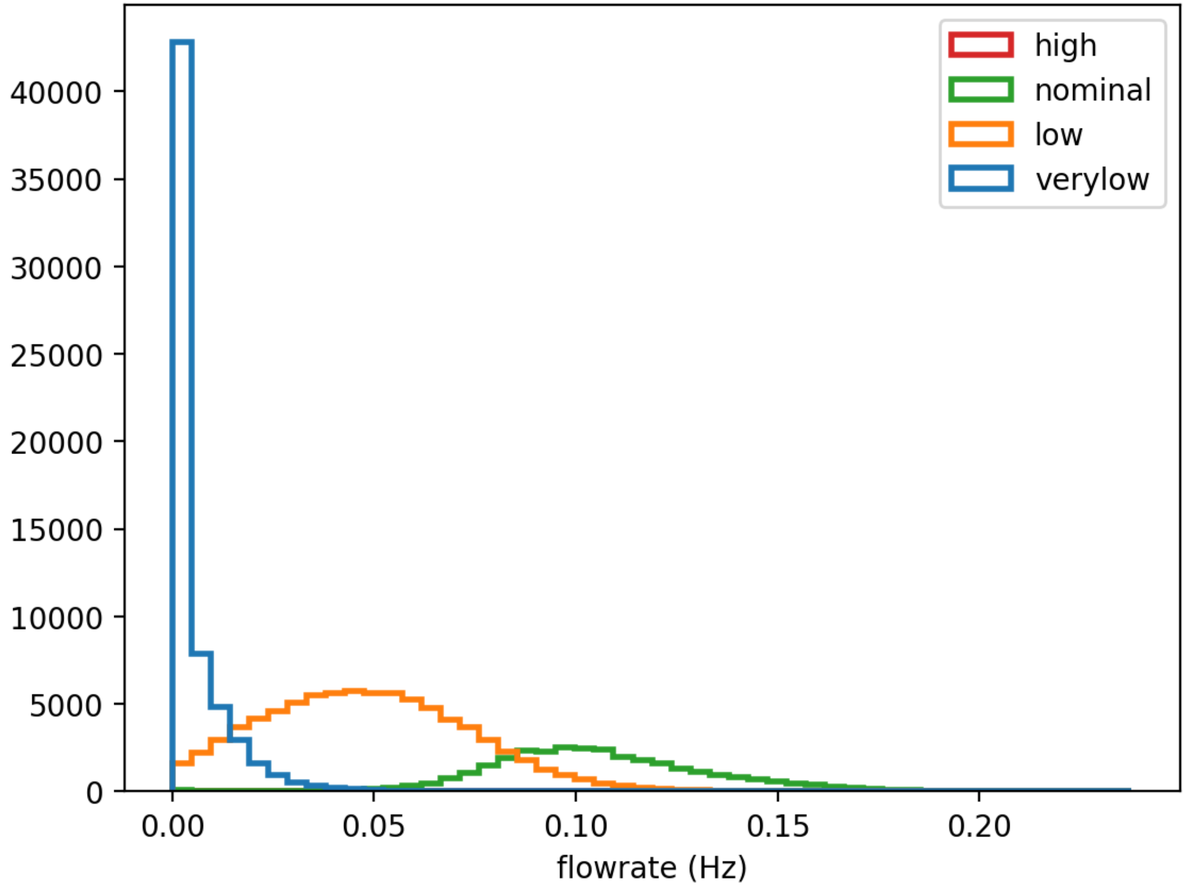

Flowrate histogram

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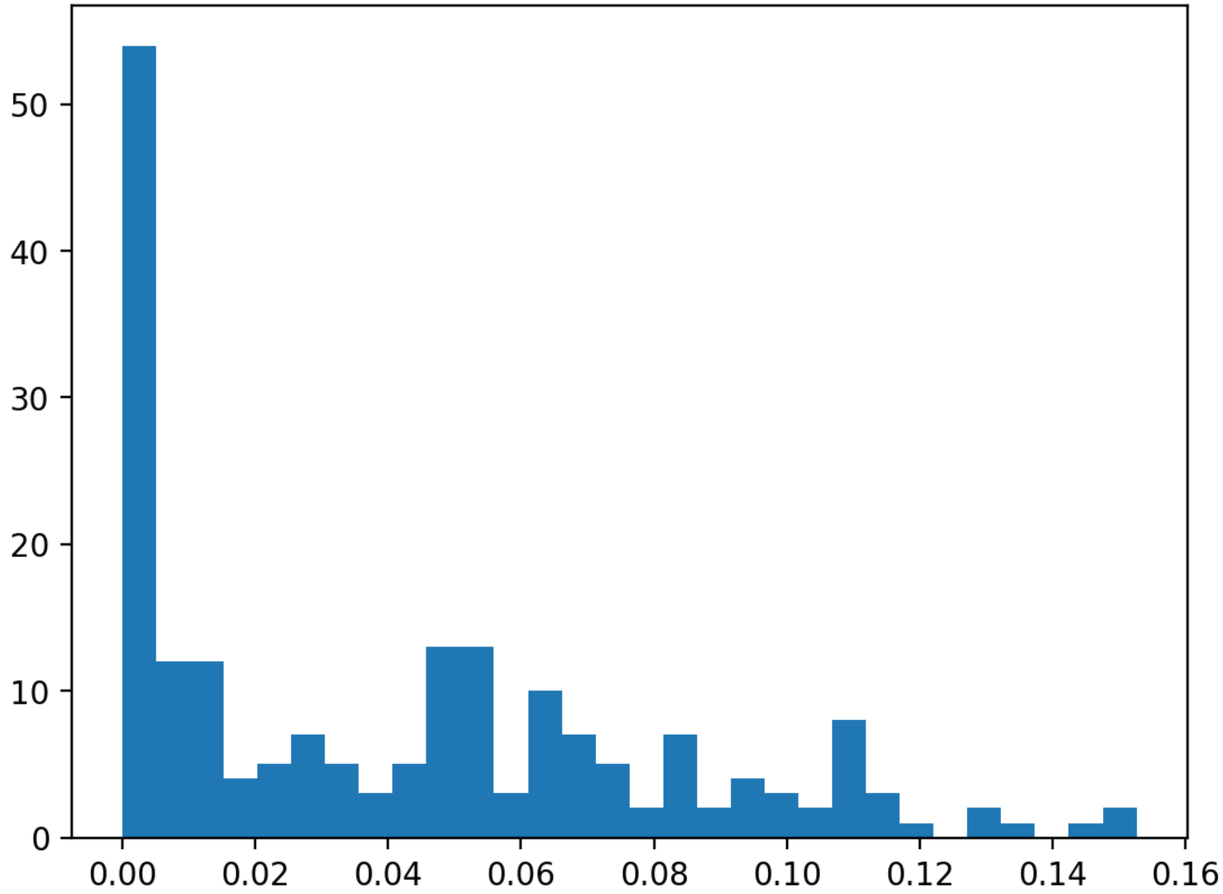
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