

Pixel Map Requirements

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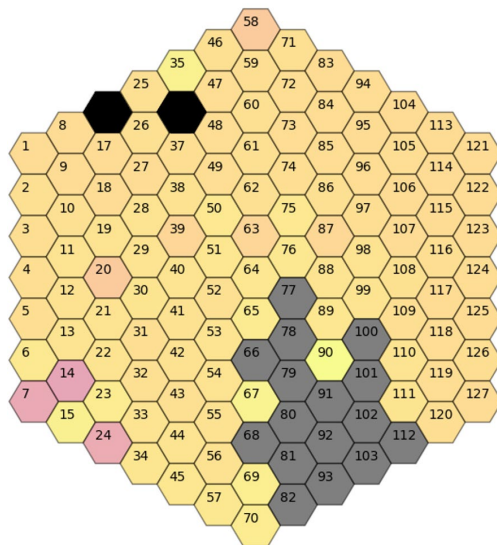
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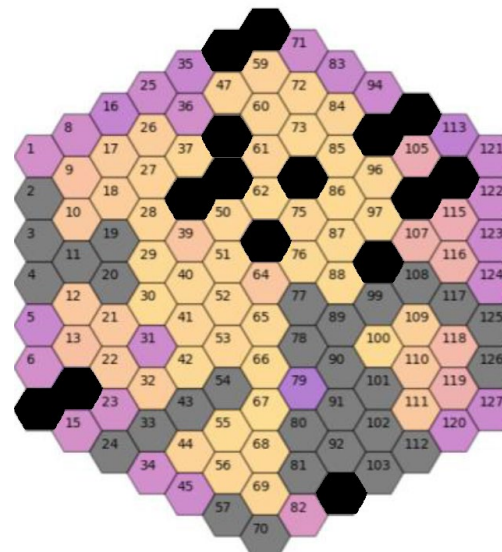
Challenge

- One reliable method to stop oscillations: unplug preamp card power
- Further: preamp card connectors become damaged in installation
- Outcome: large “holes” in detector (pixels must have all nearest-neighbors to meet physics goals)

Best achieved: 2 lost channels +
3 additional unplugged cards



Typical: 15 lost channels +
6 unplugged cards

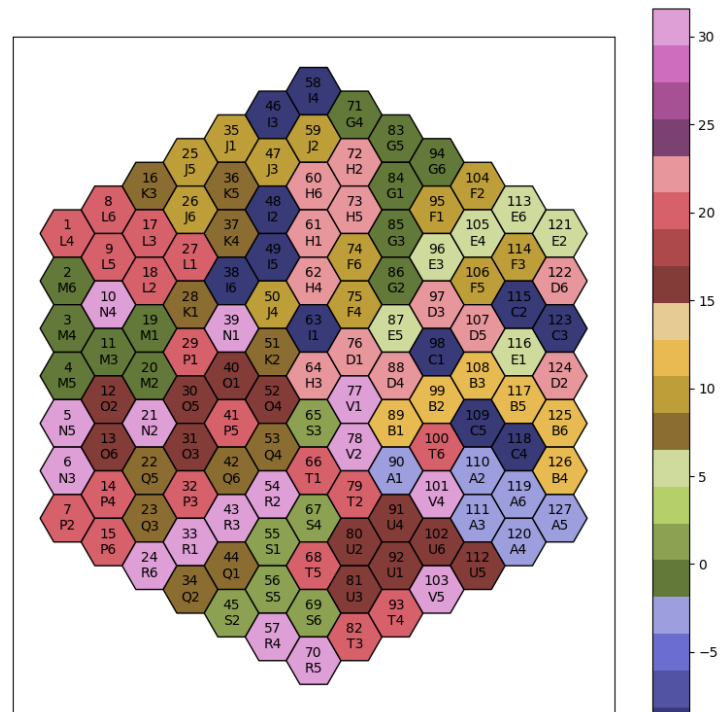


Impact: while dataset is valuable for validating experiment operation, it cannot be used for physics result

Gray = unplugged Black = missing

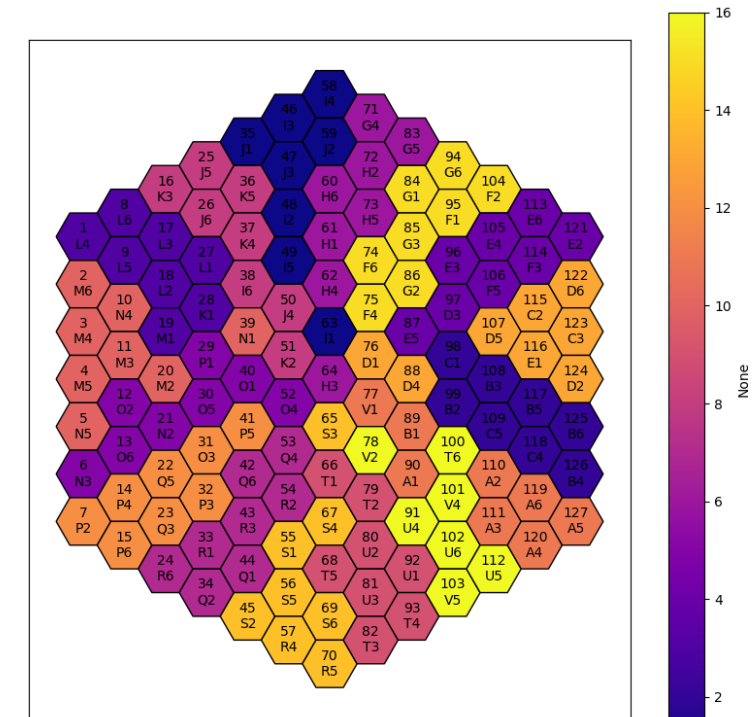
Key Underlying Issue

- Current preamp distribution to pixels: each preamp covers large area
- Further: significant mixing between FETs and Preamps
- Short-term solution: simplify mapping



Preamp to pixel map

Different colors =
different preamp cards

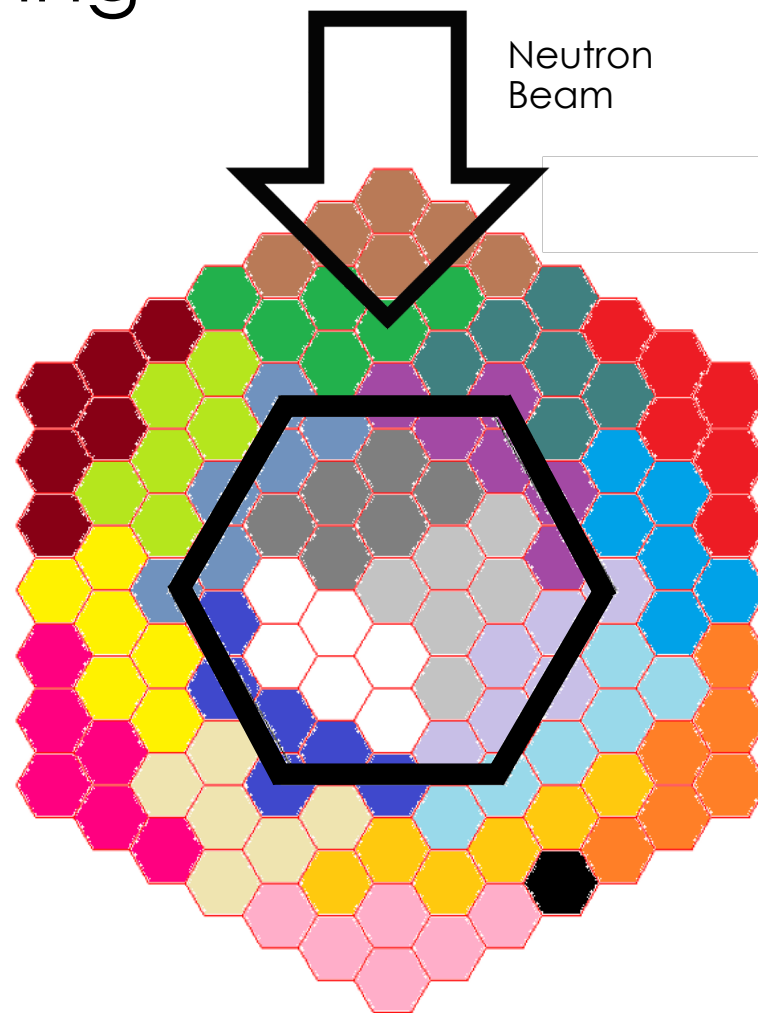


FET to pixel map

Different colors =
different FET cards

Considerations for new mapping

- Most important for Nab data-taking: pixels within black hexagon + nearest neighbor
- Removing outer ring does not risk physics goals, but they are useful as cross-check for understanding backgrounds and edge effects
- Short-term solution: temporarily unplug (at power input) outer pixels to prevent oscillations
- Secondary effect: simplify overlap between FET and preamp cards



Different colors = different preamp cards

	A	B
1	Preamp	FET
2	A1	A1
3	A2	A2
4	A3	A3
5	A4	A4
6	A5	A5
7	A6	A6
8	B1	A7
9	B2	A8
10	B3	B1
11	B4	B2
12	B5	B3
13	B6	B4
14	C1	B5
15	C2	B6
16	C3	B7
17	C4	B8
18	C5	C1
19	C6	C2
20	D1	C3
21	D2	C4
22	D3	C5
23	D4	C6
24	D5	C7
25	D6	C8