

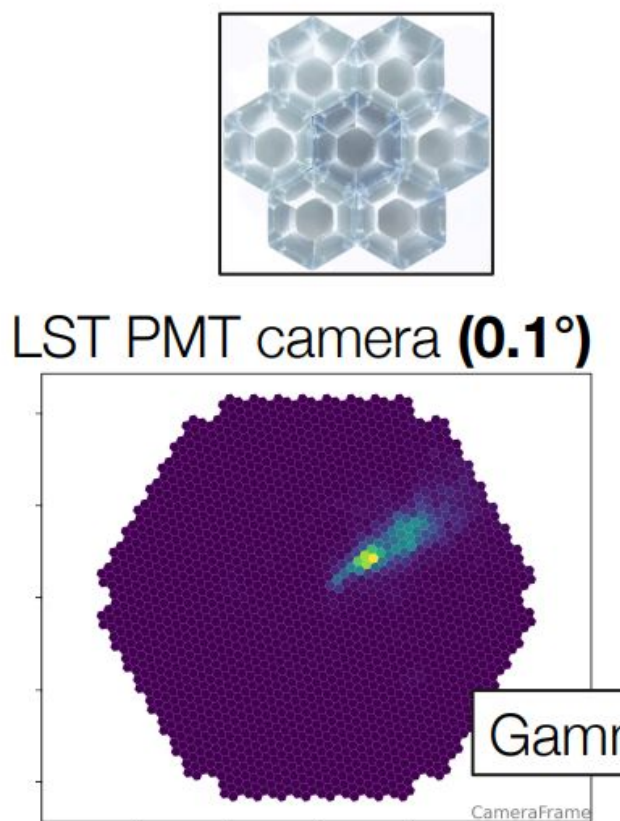
Advanced SiPM camera trigger with Convolutional Neural Networks

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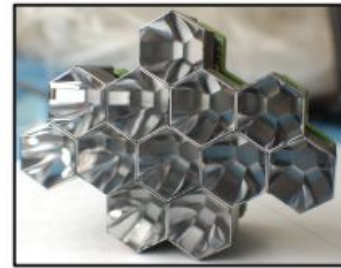
Advanced SiPM camera

- Future camera for the LSTs, using 7987 SiPMs pixels instead of 1855 PMTs.

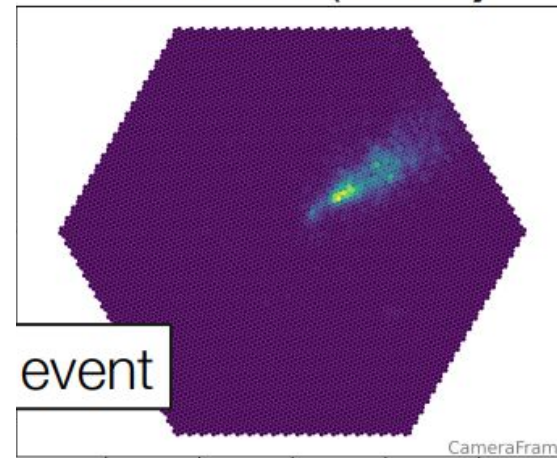


Advanced SiPM camera

- Future camera for the LSTs, using 7987 SiPMs pixels instead of 1855

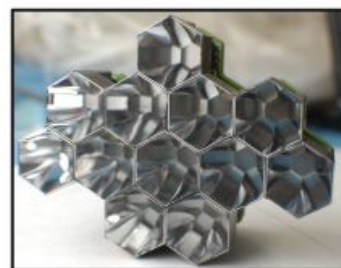
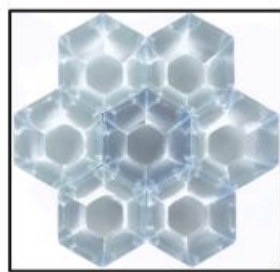


AdvCam (**0.05°**)



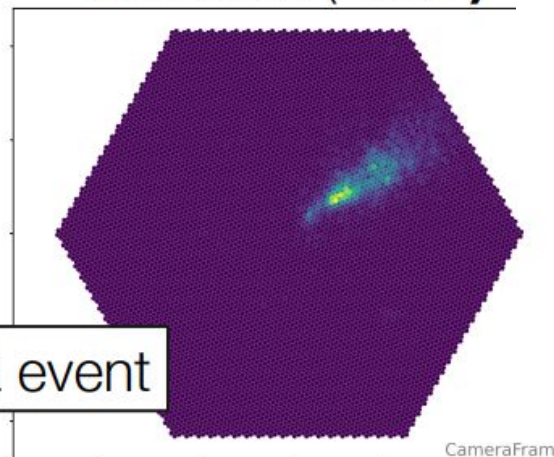
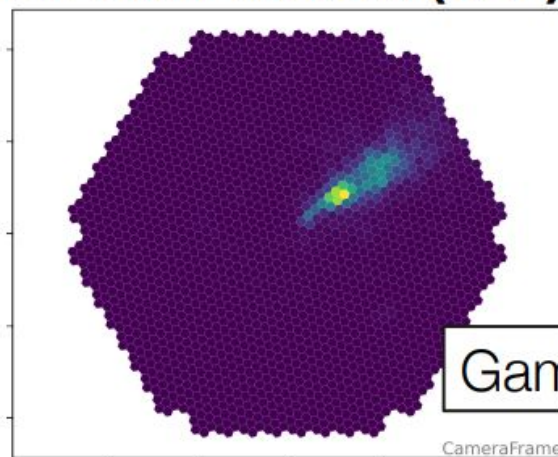
Advanced SiPM camera

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LST PMT camera (**0.1°**)

AdvCam (**0.05°**)



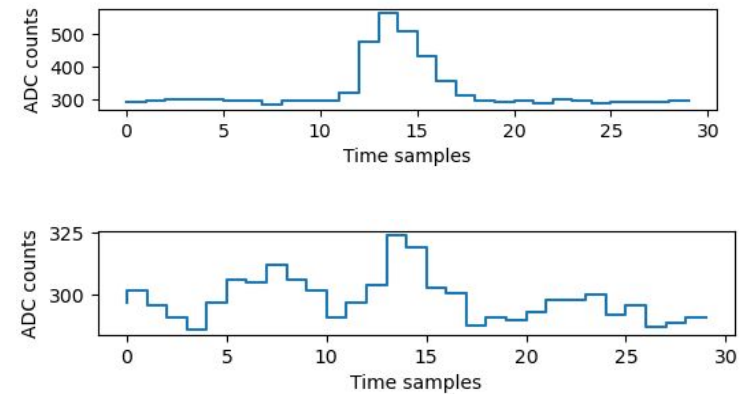
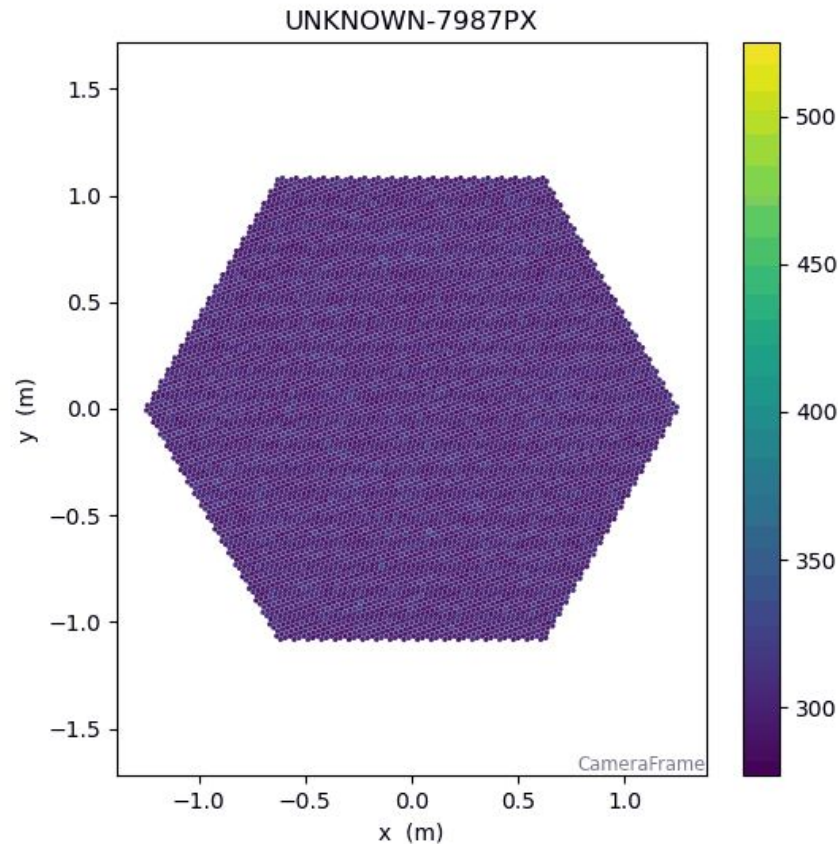
Gamma event

CameraFrame

CameraFrame

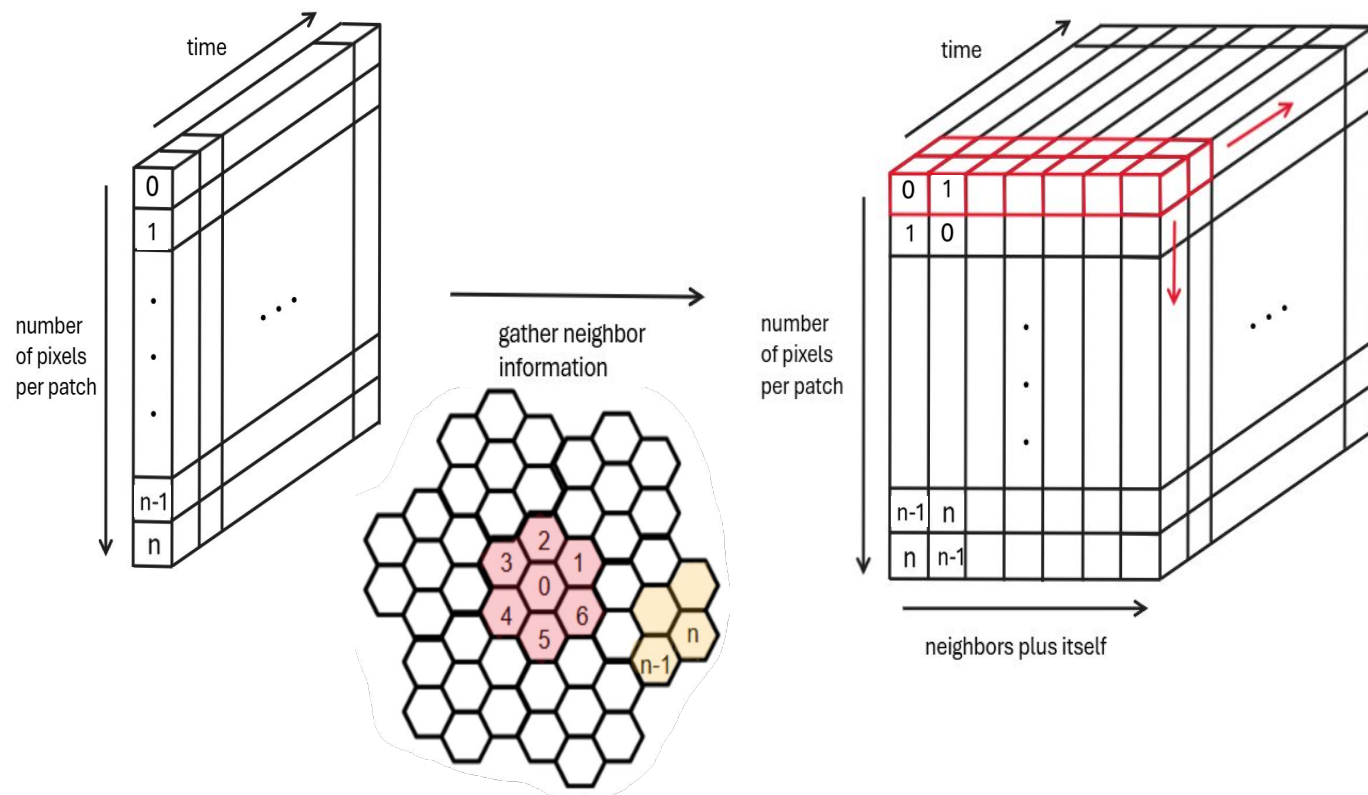
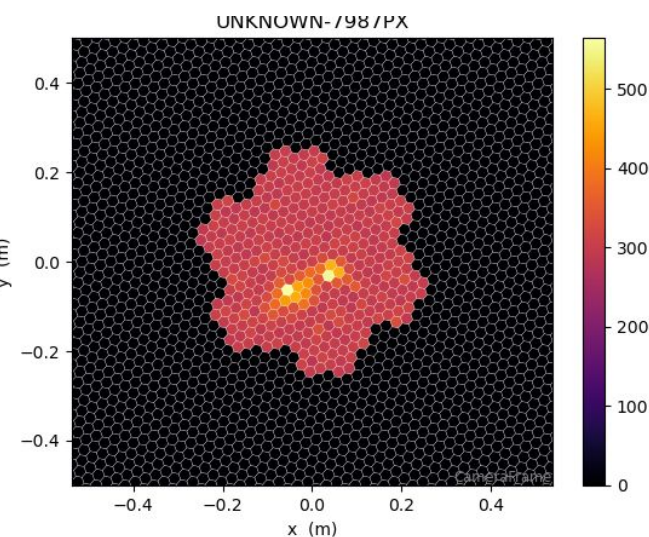
Advanced SiPM camera

- Currently working on the trigger level, on r0 data. Receiving data at ~ 1 GHz, so one sample of 7987 pixels per ns. We are working on the trigger of digital waveforms. Dataset production



Trigger at the CTP

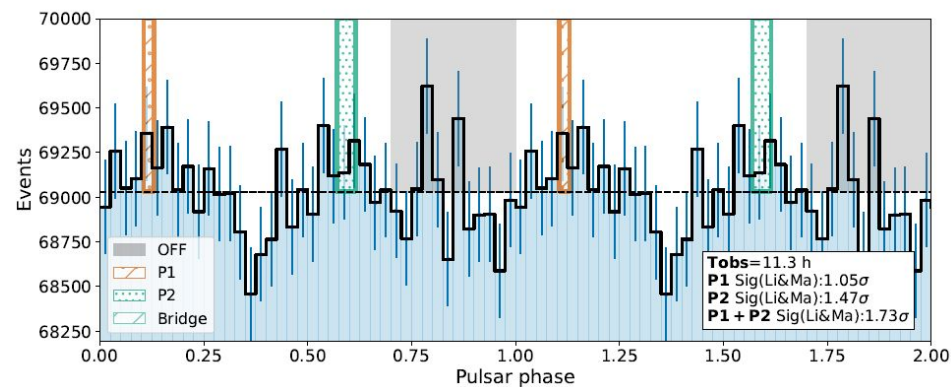
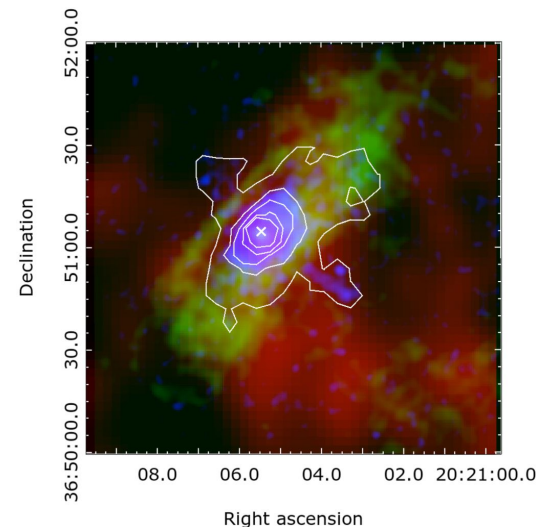
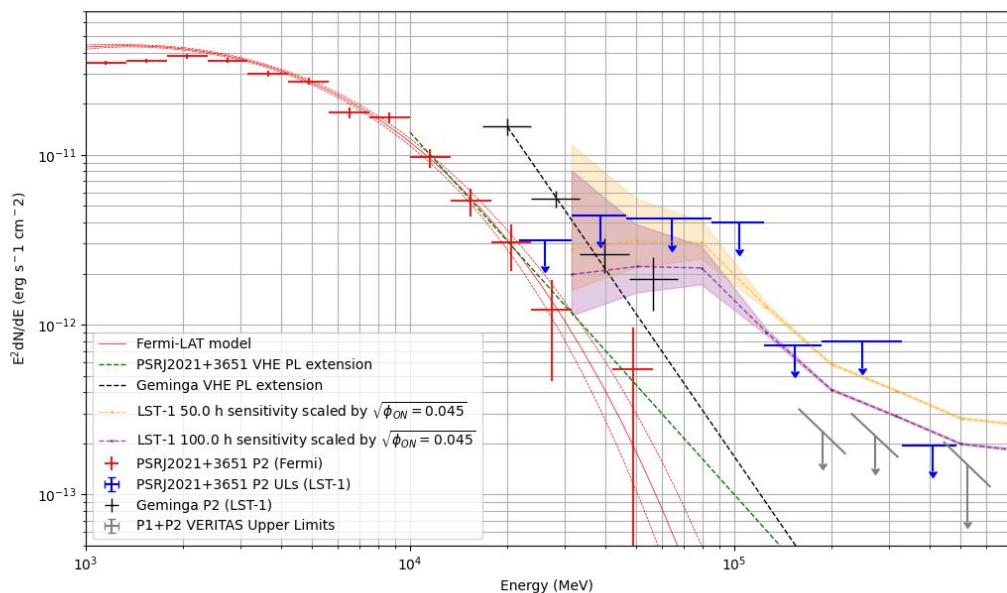
- PIXELS ARE HEXAGONAL, normally to apply DL algorithms we first map the hexagonal grid to square pixels.
- But time is crucial at the CTP, so:



- Multiple options: NSB/shower, NSB/proton/gamma, or proton/gamma separation.

Pulsar analysis

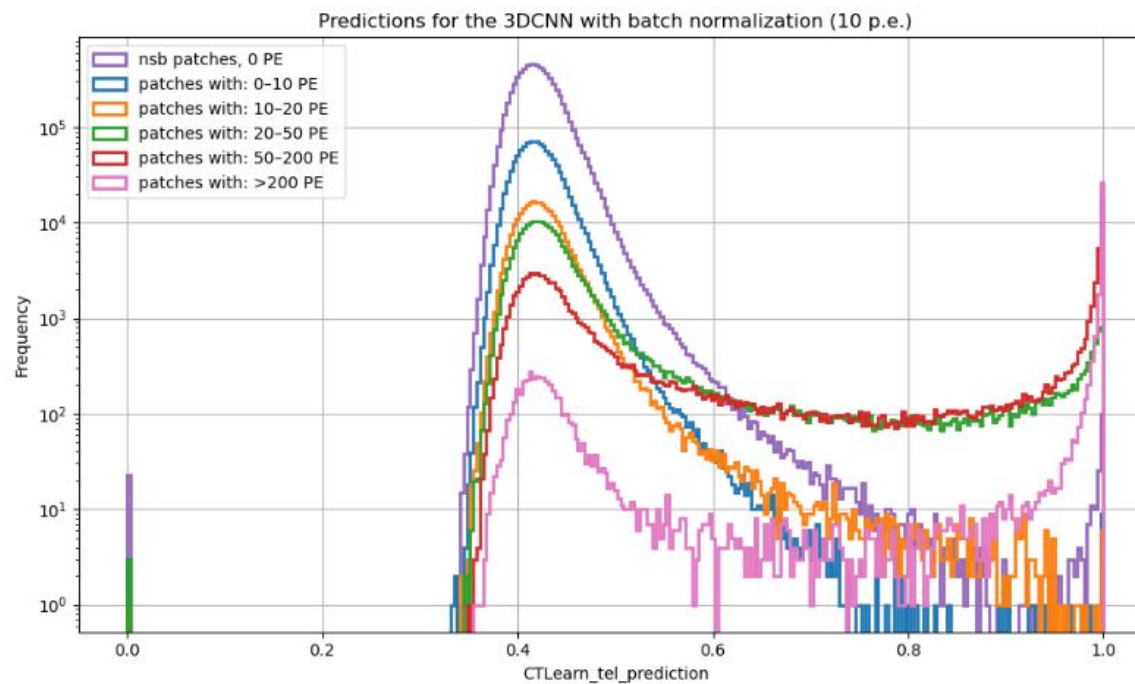
- Rapidly rotating neutron stars, that emit regular pulses with rotational periods that can go up to the ms.
- History of the Dragonfly proposals ...



THANKS, QUESTIONS?

Trigger at the CTP

- Multiple trigger levels are expected.



- Faint events that were discarded at the trigger level can be taken into consideration, reducing the threshold and the sensitivity at low energies.



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