

Cosmic Trigger

Implementation in Firmware

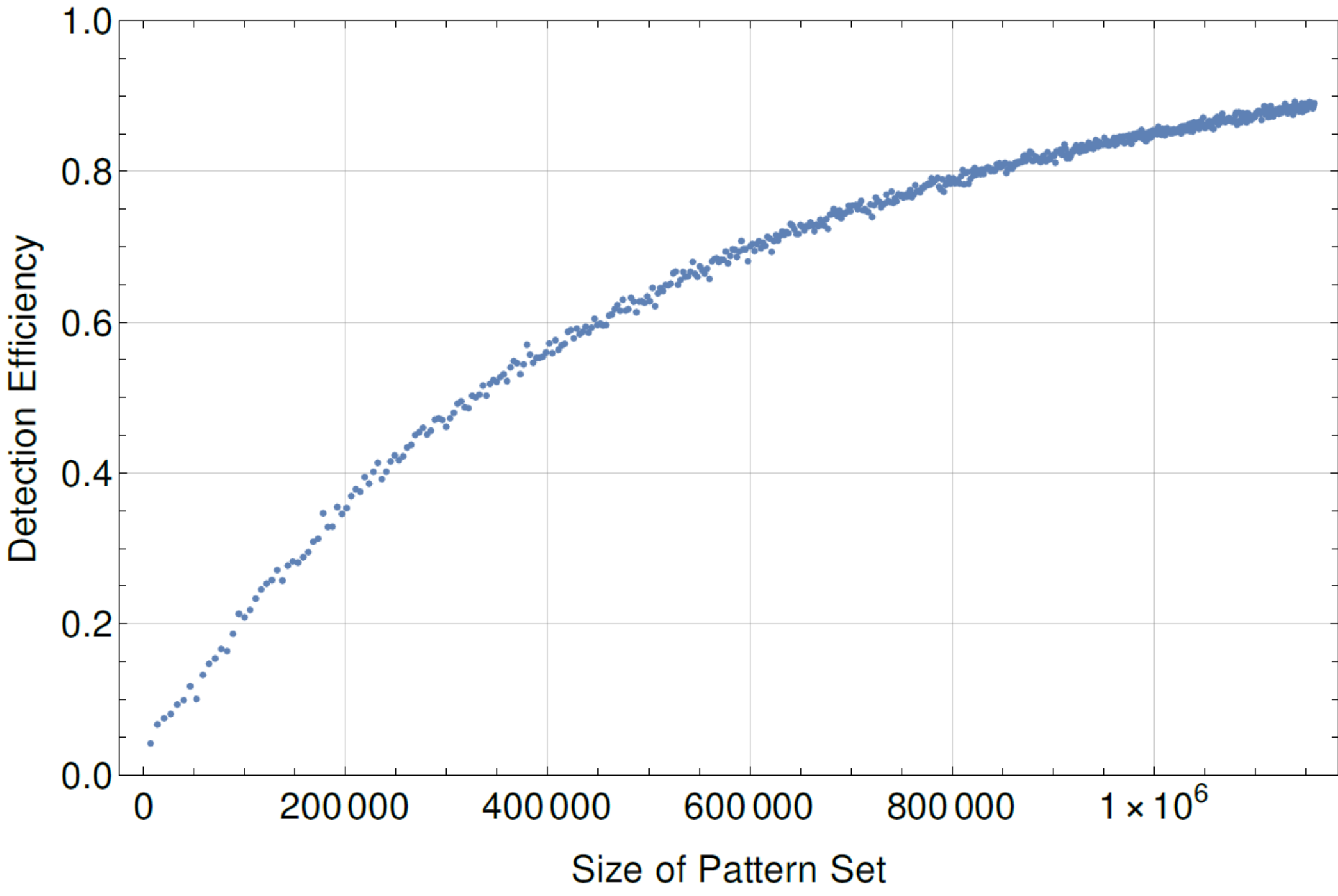
First Ideas:

- Use only ChipID for a pattern search
- Available space:
 - 400.000 Logic Units on each Arria10 in the Farm

For N patterns we need: $N/2 * \log_7(N)$ ALM's

→ 125.000 Patterns / Arria10

→ 1-2 Million Patterns in the complete Farm



Next Steps:

- run simulation in normal mode, throw away all patterns that trigger (computationally expensive):
 - Linear in size of pattern set and frame size OR
 - Logarithmic in size of pattern set, binomial coefficient of frame size
- go to higher granularity (in z ?)