

The Spark-Detection-System in Bonn

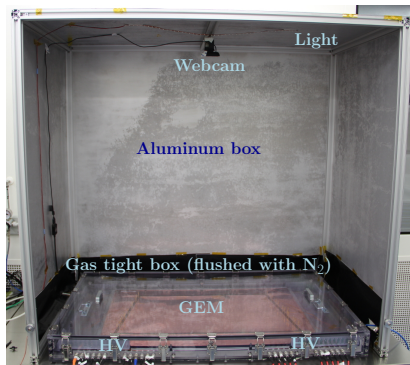
DISCO Kick-Off Meeting

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27 July 2018

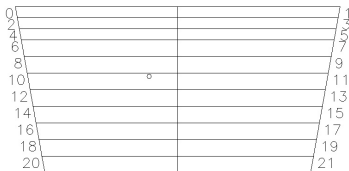


- ▶ QA of ALICE GEMs:
 - ▶ Apply 500 V to foil
 - ▶ Measure leakage currents
 - ▶ Detect sparks
- ▶ Usually: Detect sparks by eye
 - ▶ Cumbersome, imprecise
- ▶ Bonn: Developed SDS
 - ▶ Detects sparks
 - ▶ Precision ≈ 1 mm
 - ▶ Efficiency $\approx 99\%$



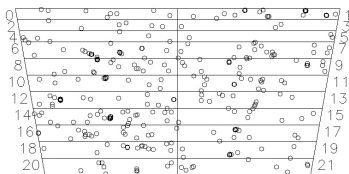
Good foil:

- ▶ Live display of sparks
- ▶ Saves each spark in a file
 - ▶ x, y coordinate
 - ▶ Timestamp
- ▶ Most of the foils are ok
 - ▶ Only few sparks occur



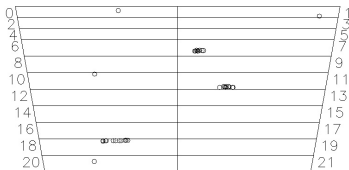
- ▶ Few foils show a lot of sparks
 - ▶ On the same spot
 - ▶ Distributed over the foil
 - ▶ Distributed over many measurements

Bad foil:

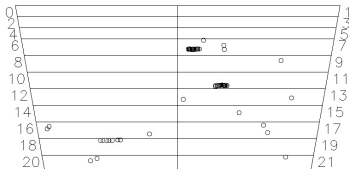


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First measurement:

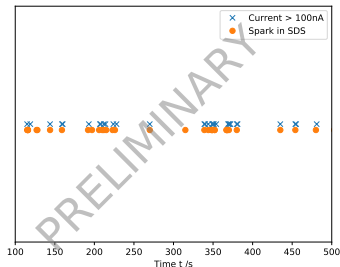


Second measurement:



- ▶ We have a lot of data
 - ▶ ≈ 120 Foils
 - ▶ ≈ 240 Measurements
- ▶ Current & data from SDS
 - ▶ Are they correlated?
- ▶ Spatial distribution?
- ▶ Ideas?

Correlation between current
and SDS event:



- ▶ Webcam:
 - ▶ Logitech (≈ 40 Euro)
 - ▶ 800×600 px
- ▶ Software:
 - ▶ LabVIEW based
- ▶ Start of each measurement: Click four corners of the GEM
 - ▶ Reproducible, increases precision
 - ▶ Correct camera tilting

