Pixel annealing times
+ database structuring
+ ADC pulse-height optimization

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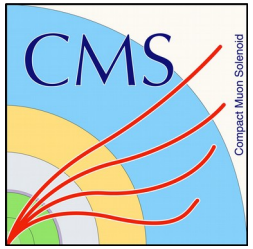
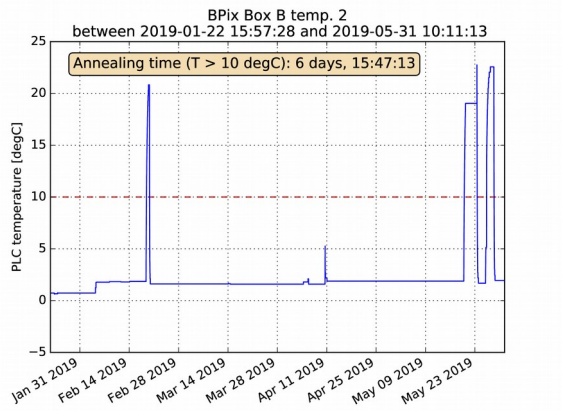
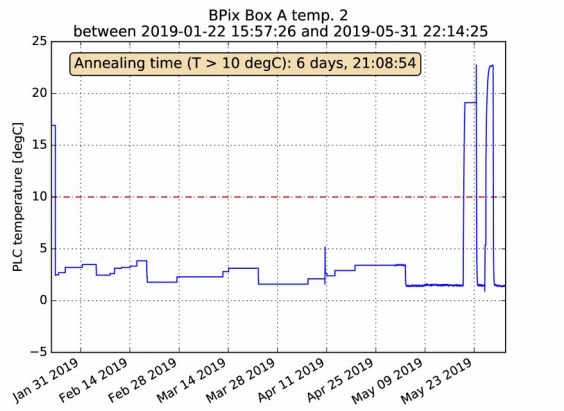


Christopher Matthies

Pixel annealing times

- Use temperature monitoring information to estimate annealing times of pixels per detector part (FPix/BPix BmI/BmO/BpI/BpO)
- Use different sensors to get the most accurate temperature history available; e.g. during clean room times (when other sensors are disabled), use air temperature of cooling boxes





Pixel database structuring

- Avoid storing crucial information about pixel detector in uncentralized files with non-standardized formats
- Therefore, add common detector information to pixel database
- First step: ROC positions (eta, z, phi) will be added to database
  Later: Tot. int. lumi, fluence, dose per detector part; list of “good” fills; touching points of modules with cooling loops; etc.

Plan: ADC pulse-height (PH) optimization

- Hit signals in pixel unit cell (PUC) are sent to analog-to-digital converter (ADC); pulse height ~ charge current, converted to 8-bit signal (0-255)
- Digital signal calibratable with offset and gain values
- Calibrate offset and gain such that the 0-255 range is utilized optimally