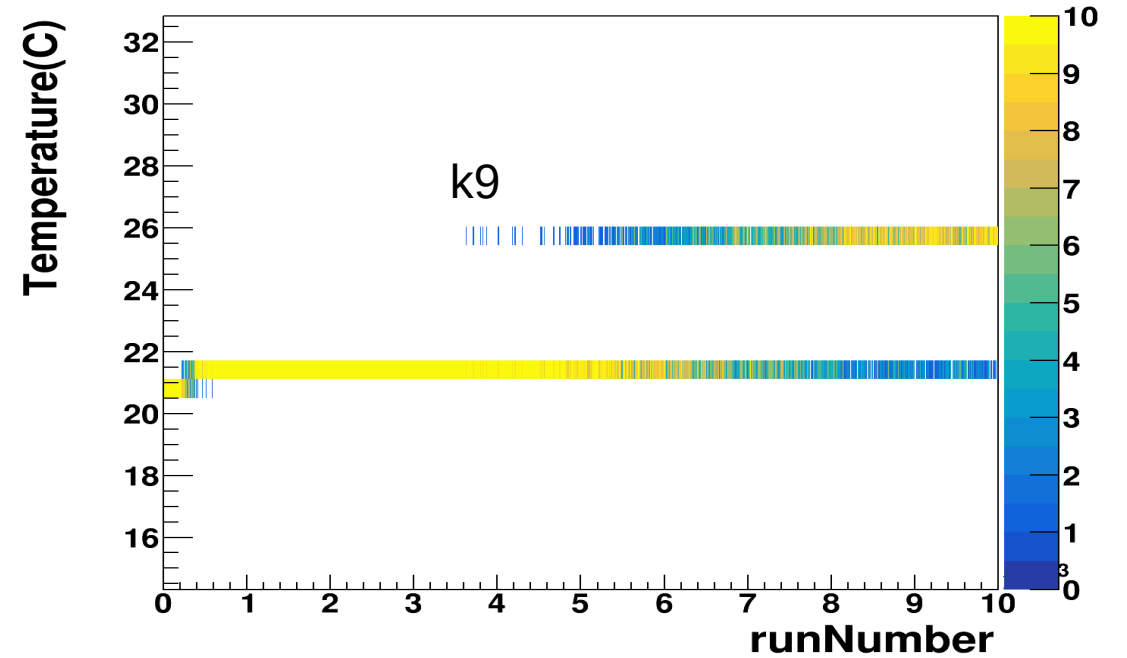
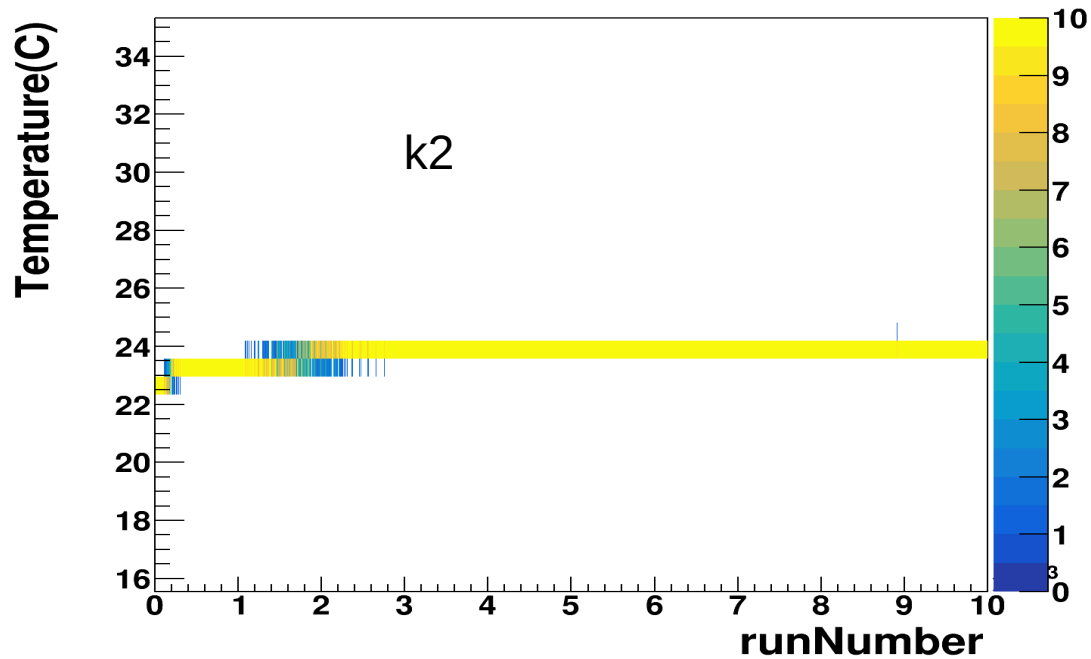


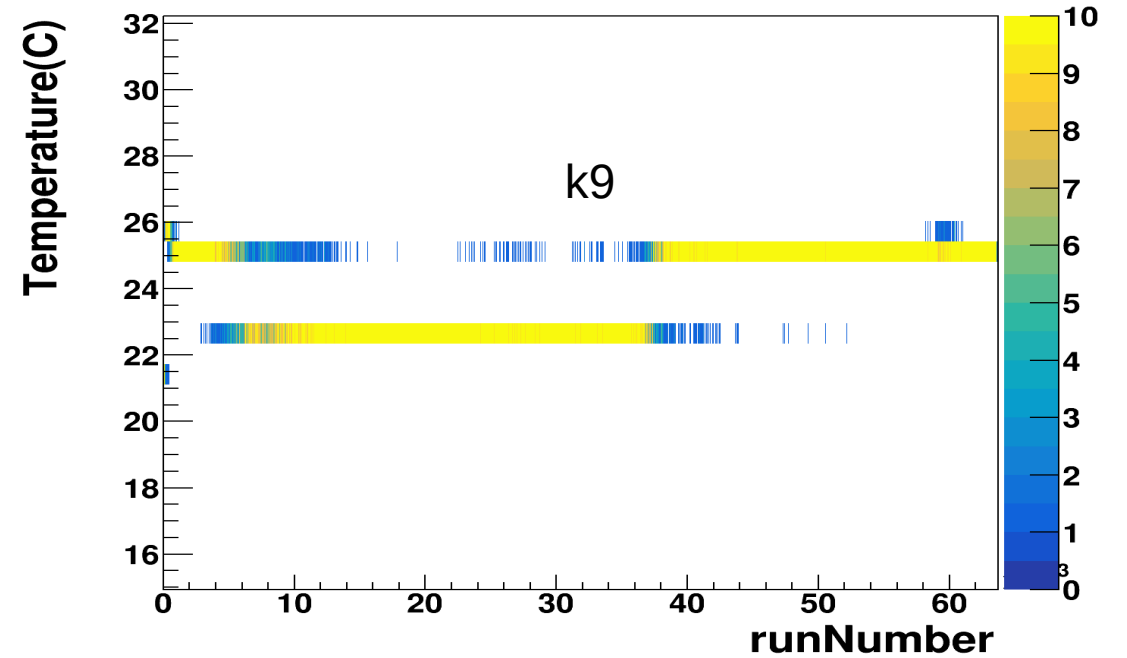
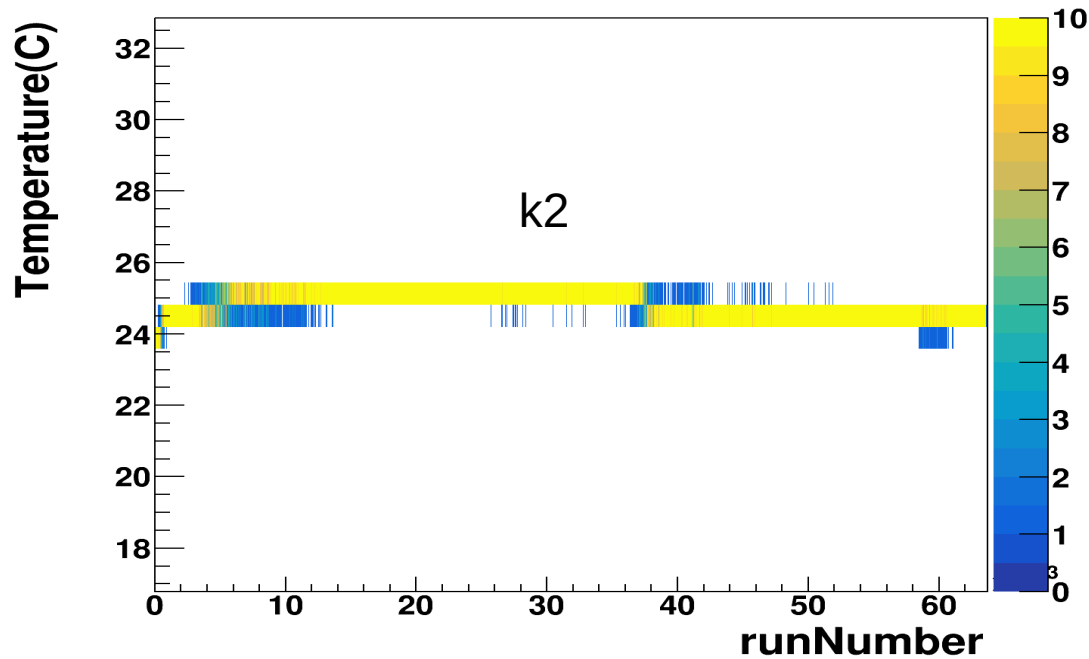
# Temperature data (last week)

- When checking the temperature versus the runNumber (equivalent to time since start of run) we do see a slight heating up of the KpiX.
- Unfortunately as temperature data is taken at the start (I think) of the entire acquisition I cannot tell if there is some heating up during the acquisition itself.



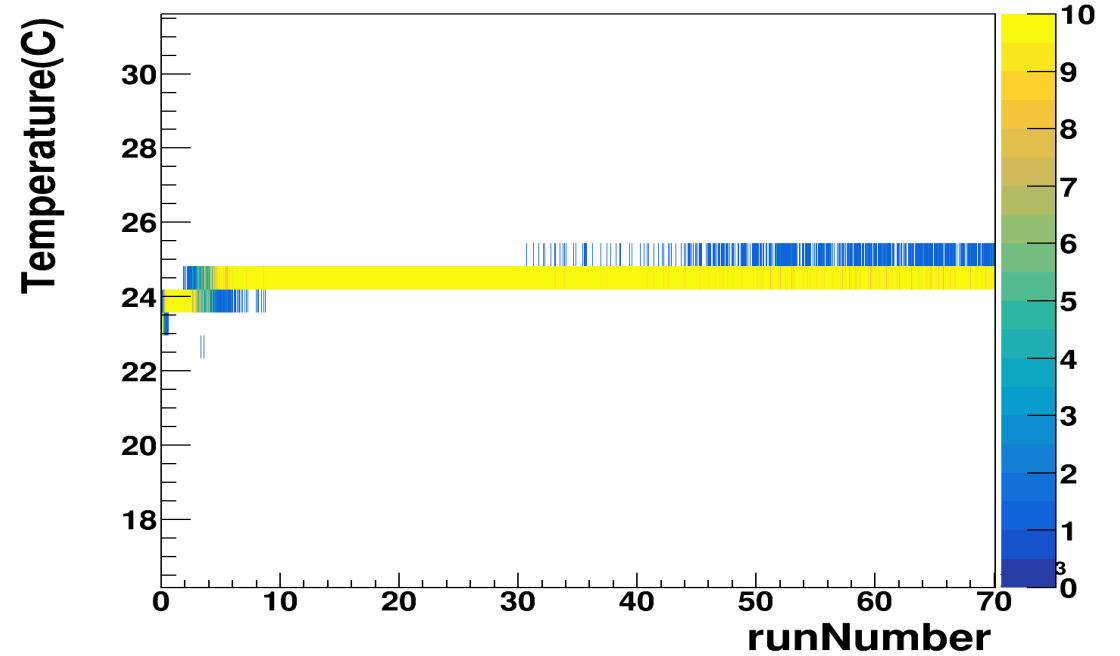
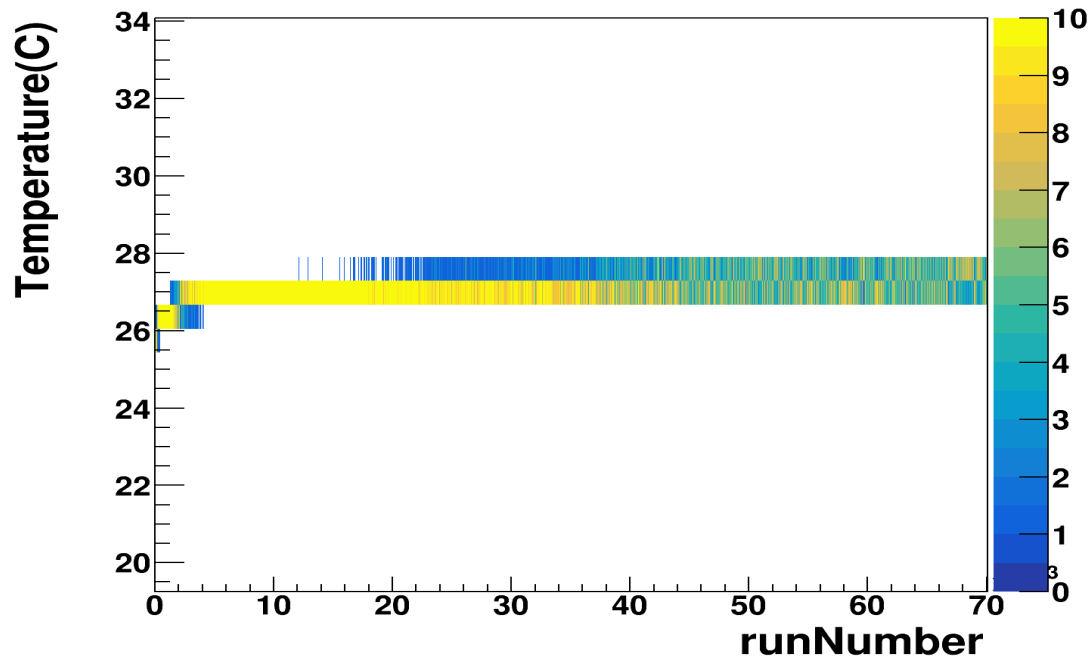
# Temperature data (new)

- The new data was taken over 1 hour. Over that entire duration most KpiX vary between 3 temperature bins. The bin granularity is equivalent to the temperature accuracy meaning that one bin to the next is a change of 1 ADC.
- In one long run k9 showed the weird behavior again but in another it behaved perfectly normal.



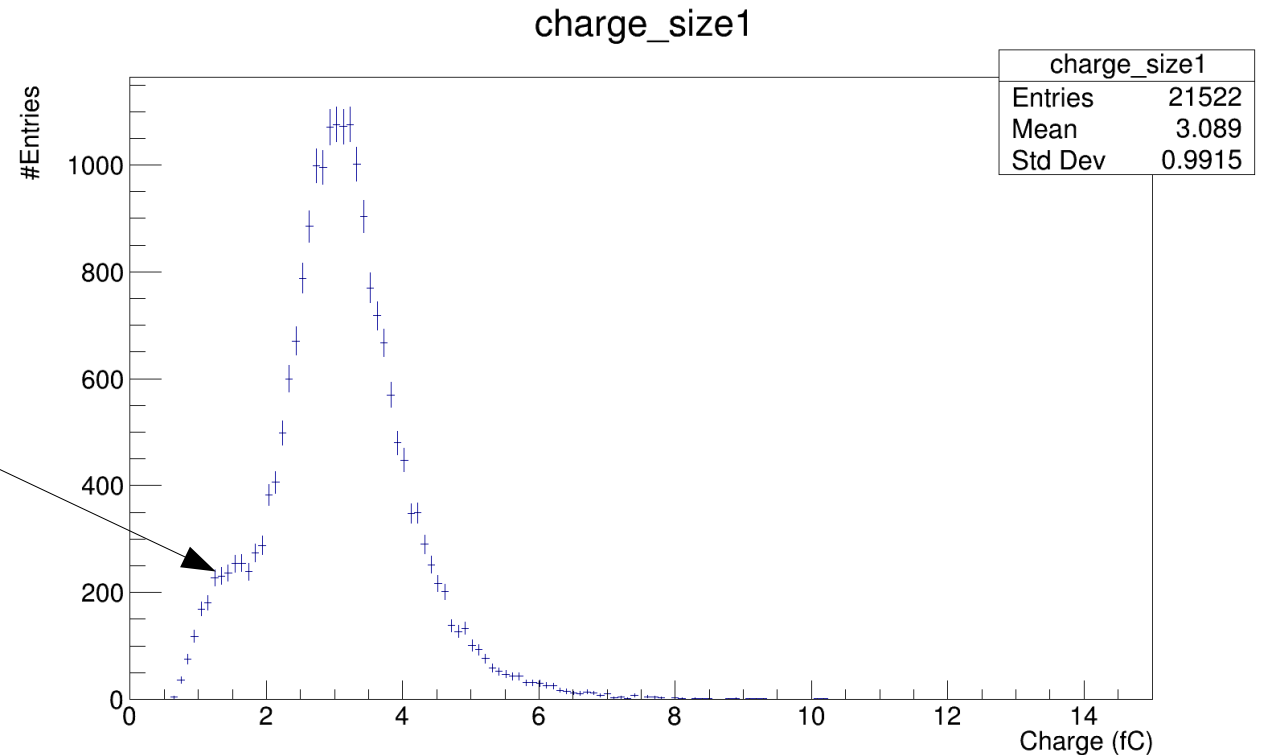
# Temperature data (new2)

- The new data was taken over 1 hour. Over that entire duration most KpiX vary between 3 temperature bins. The bin granularity is equivalent to the temperature accuracy meaning that one bin to the next is a change of 1 ADC.
- In one long run k9 showed the weird behavior again but in another it behaved perfectly normal.



# Potential reasons for the low charge bump

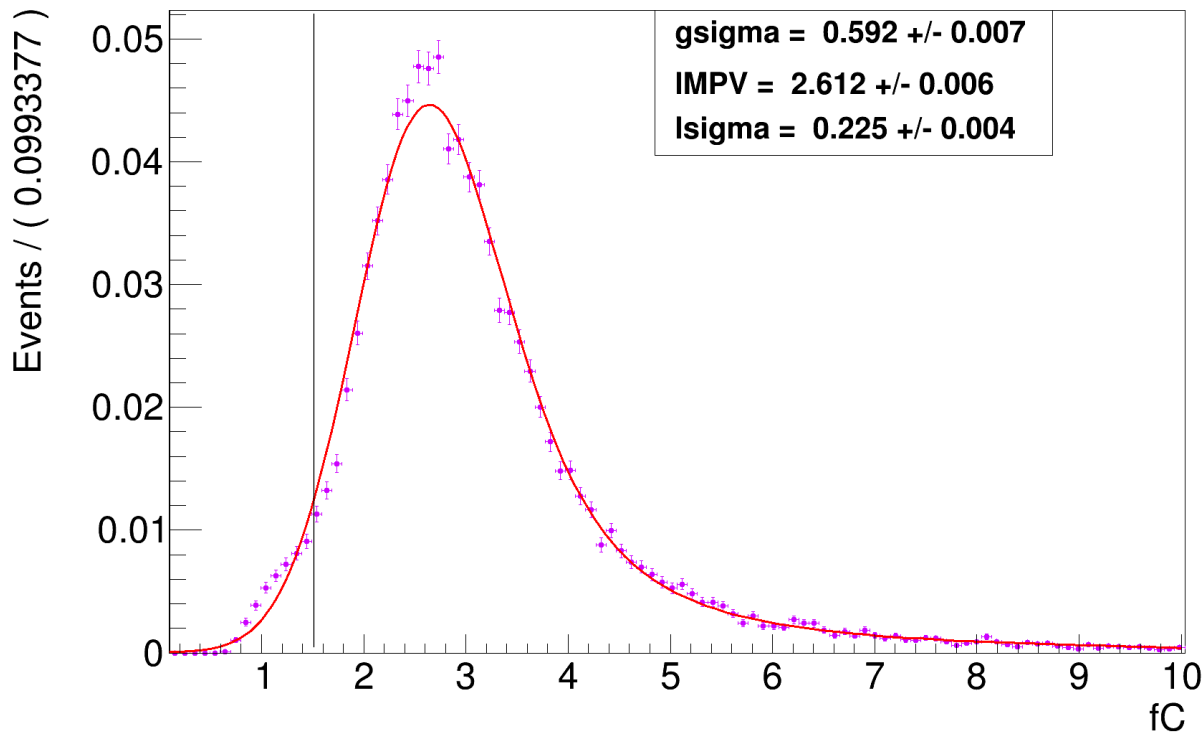
- Weird bump at low values.
- Either:
  - 2 strip clusters where one strip was lost to the S/N cut
- Or:
  - Incorrect cluster splitting splits charge between adjacent clusters incorrectly (explanation at the end)



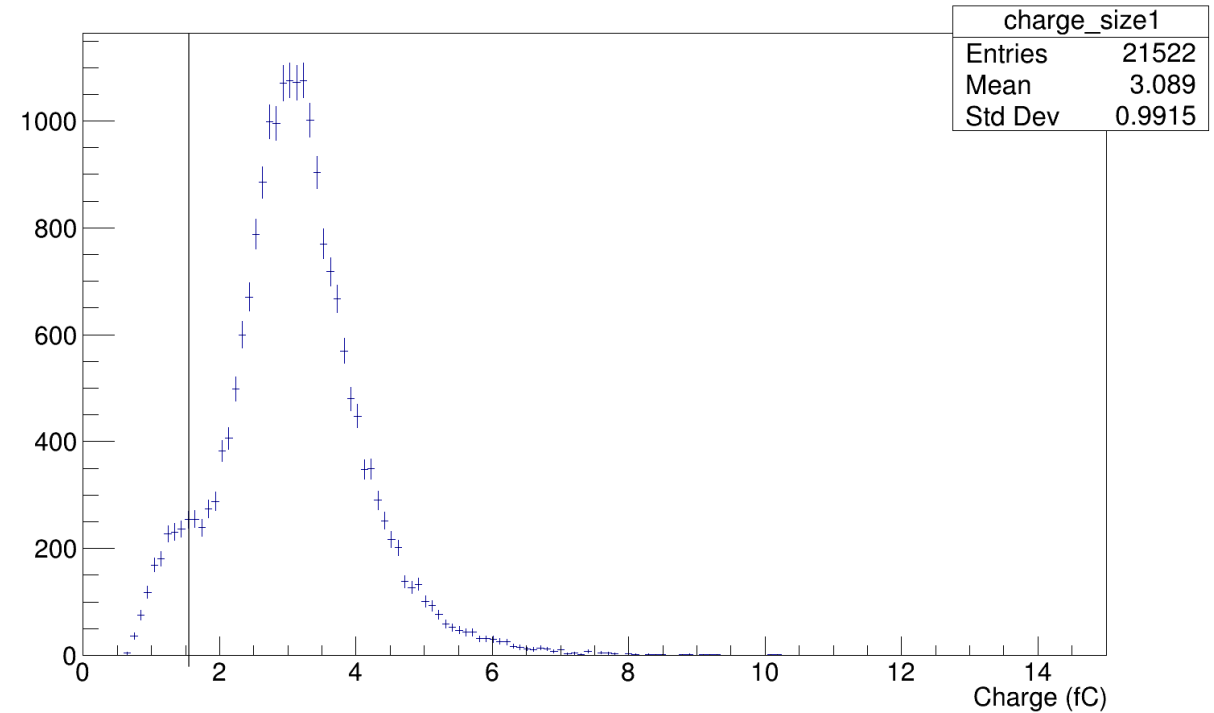
# Potential reasons for the low charge bump

- Suggestion was to instead of looking in regions for a bump in charge, to perform a charge cut and then look for where this bump is mostly located
- The cut is performed at 1.5 fC as, for floating charge hits, at 2 fC we would cut significantly into the rising part of the charge distribution

charge\_floating



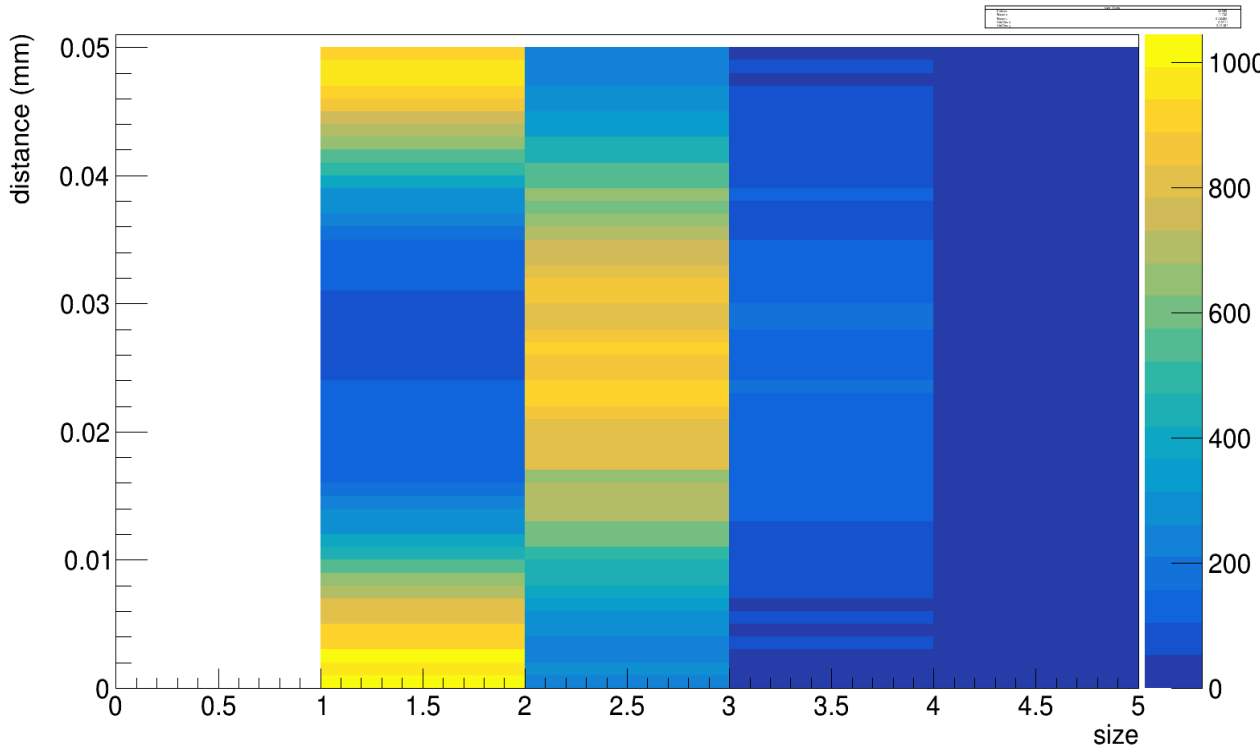
charge\_size1



# Potential reasons for the low charge bump

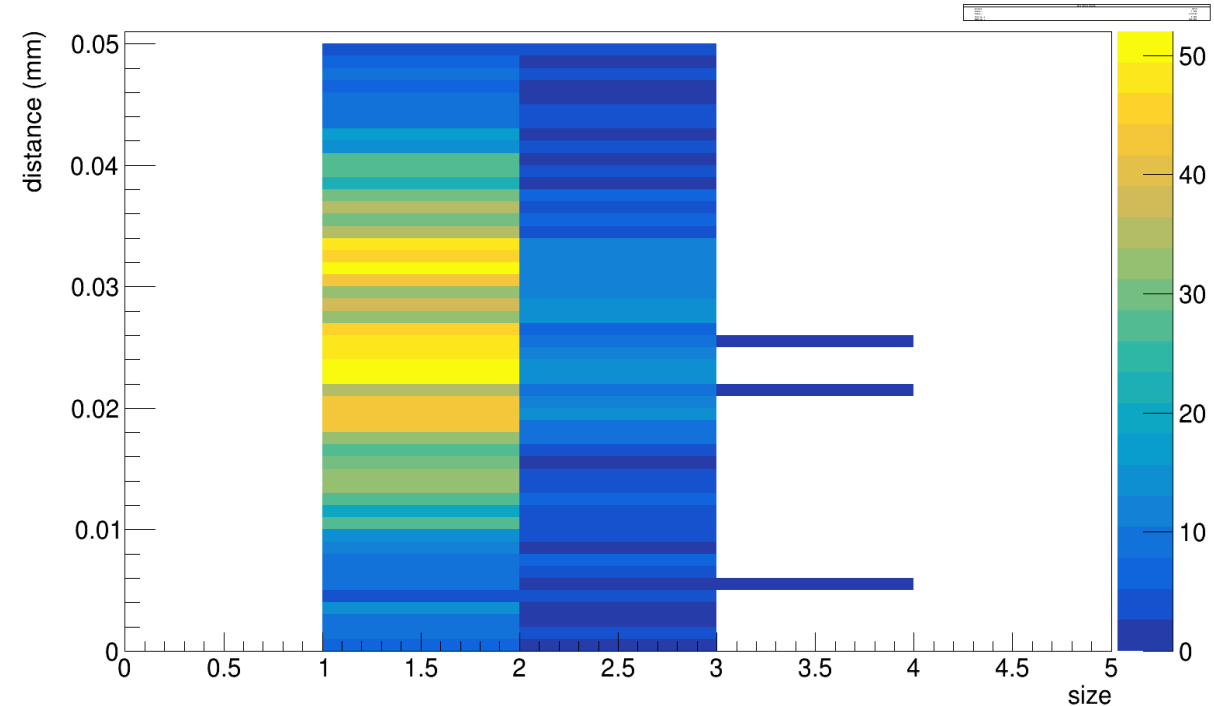
- Comparing the two results one can see that most of these hits are 1 hits clusters where the particle went through a floating strip hit. As such the other strip must have been below the cut value and the cluster was therefore incorrectly attributed to a single hit cluster.
- While it might seem weird that so many of these cases happen when the beam hits dead center in the floating strip. The total number of entries in the left plot is 56000 while in the right is only 1600 meaning it is only a very small fraction of hits where this is the case.

size\_fitpos



Without cut on charge

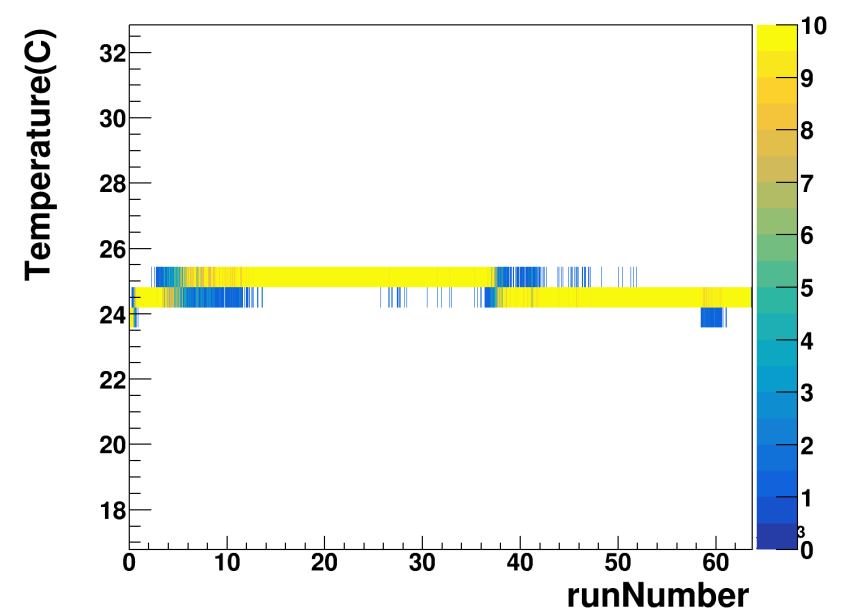
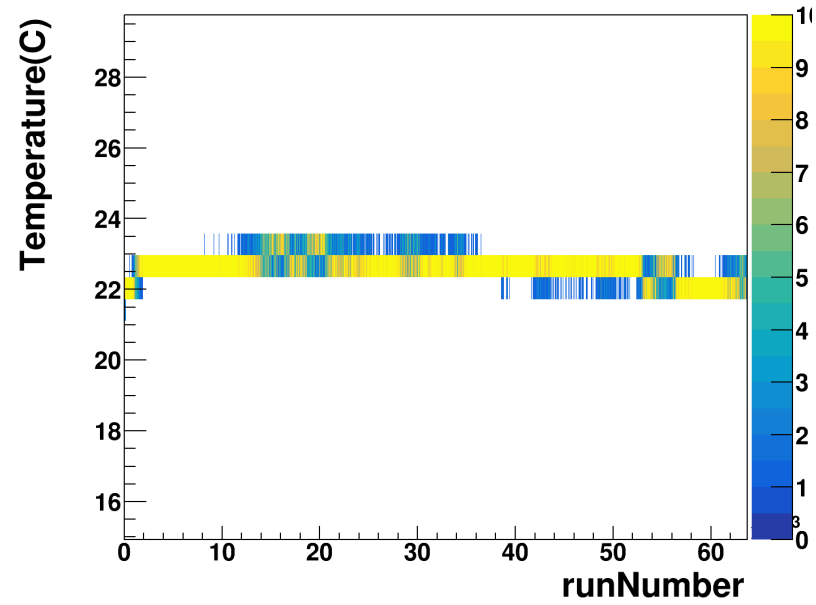
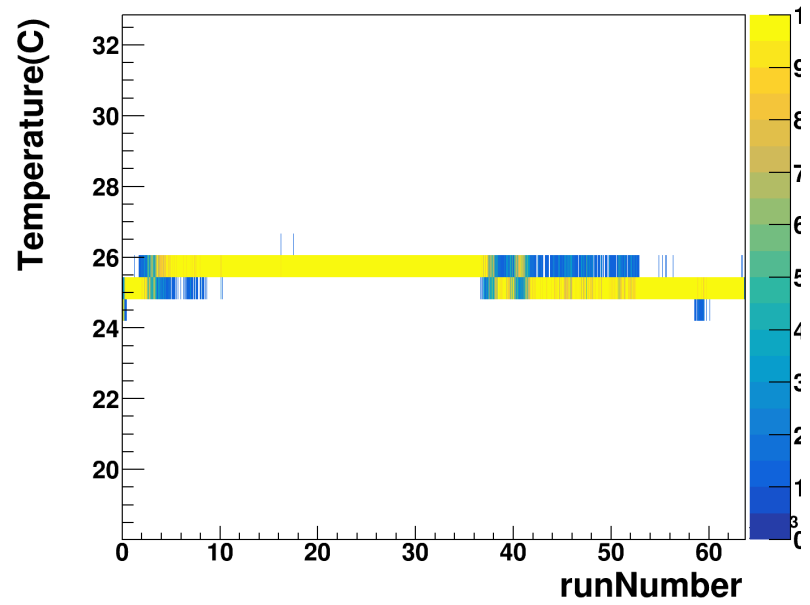
size\_fitpos\_bump



Only charge < 1.5 fC

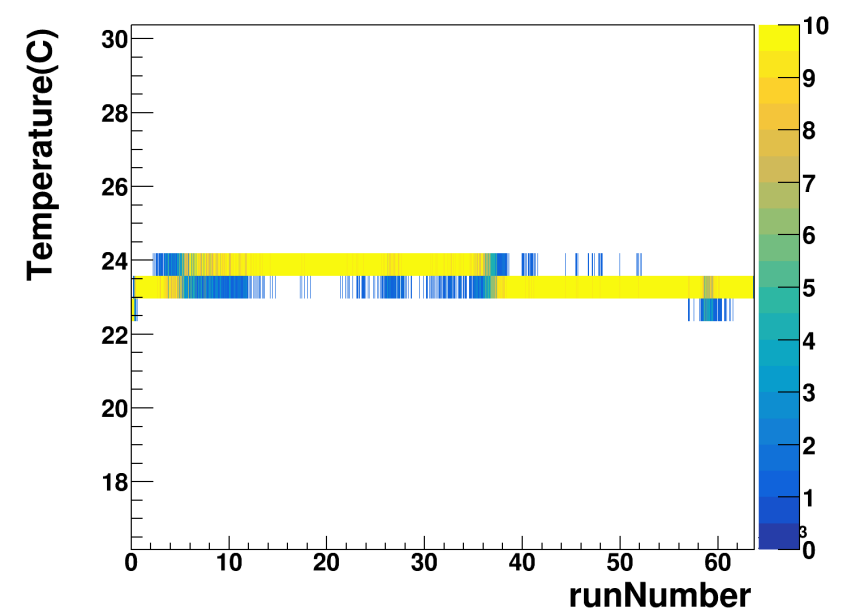
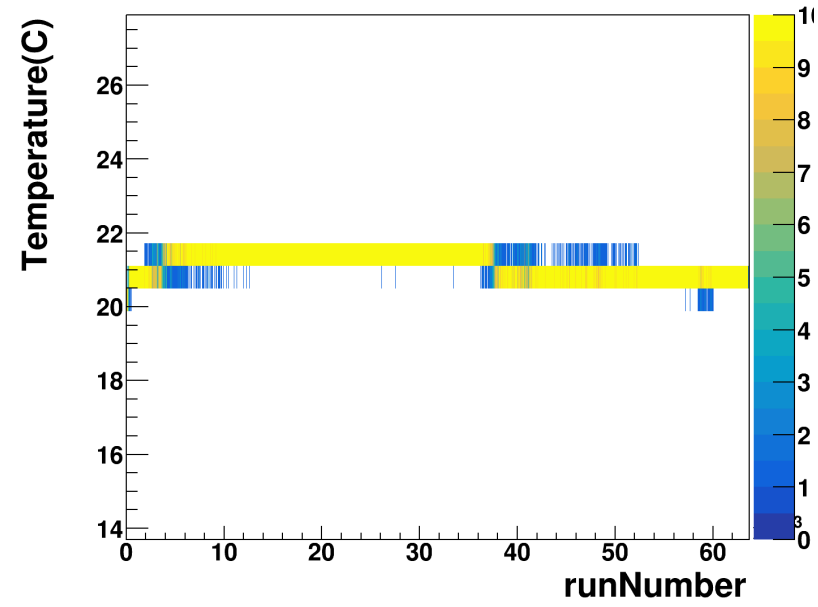
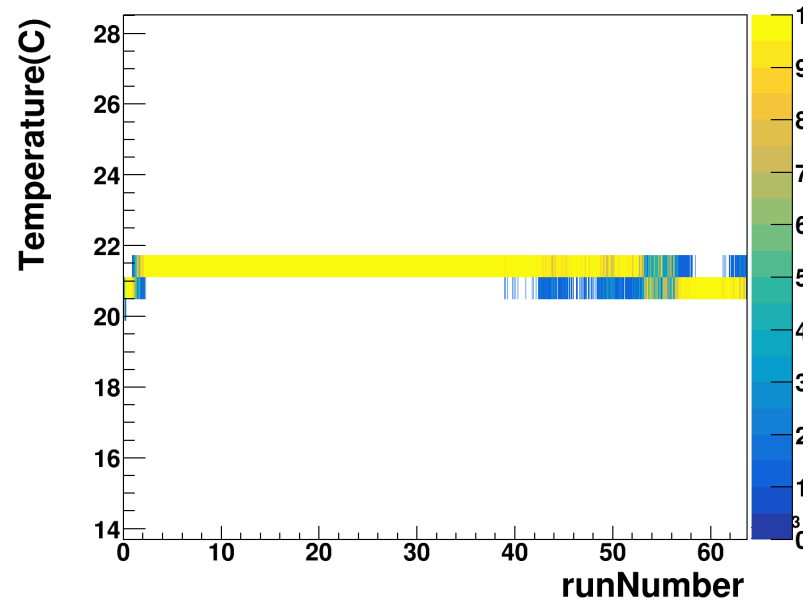
# Backup

# Kpix Temp (0+1+2)

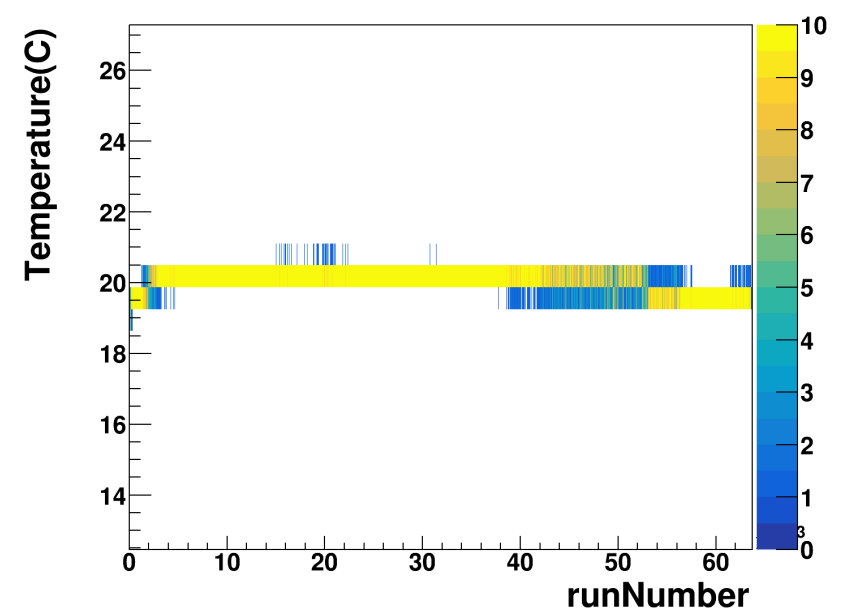
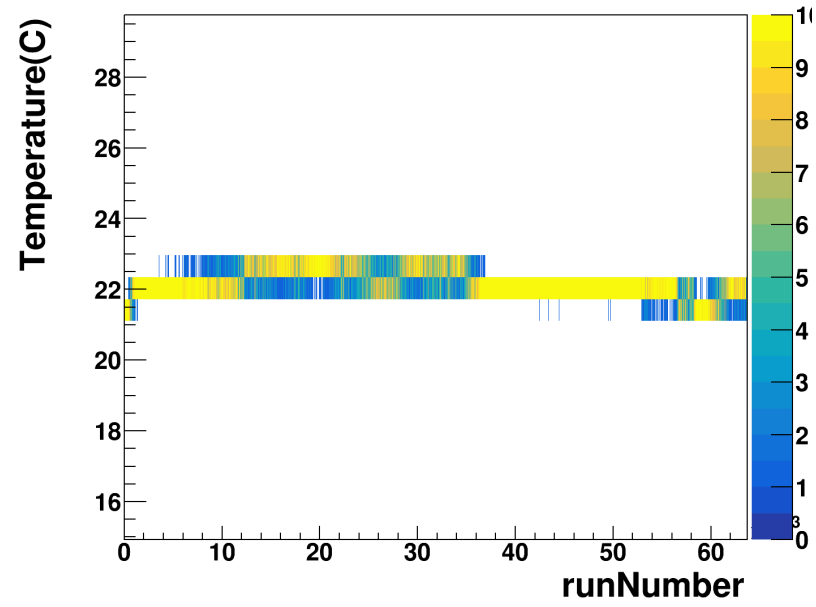
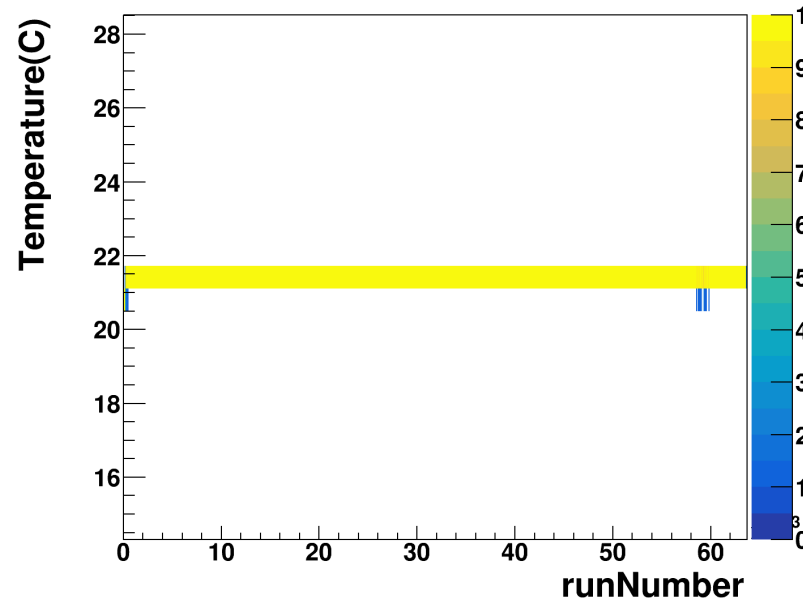




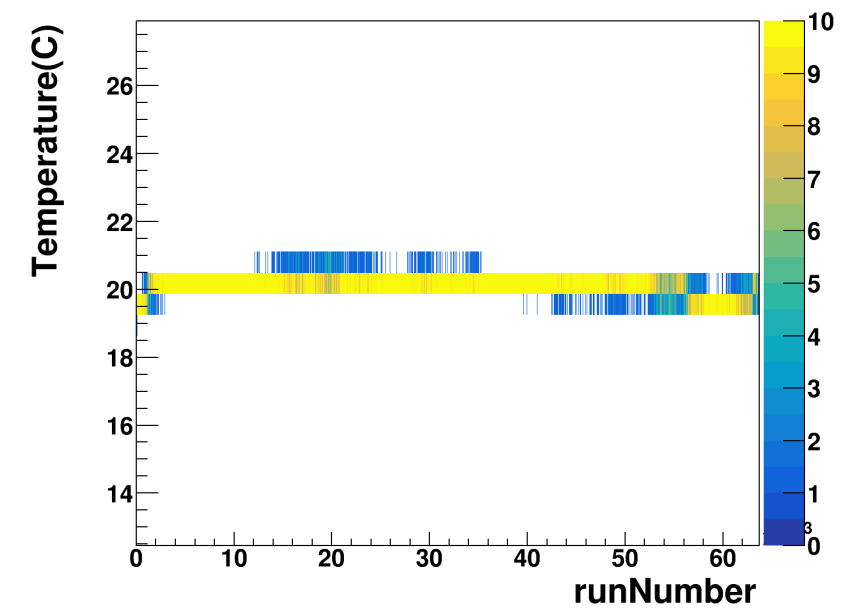
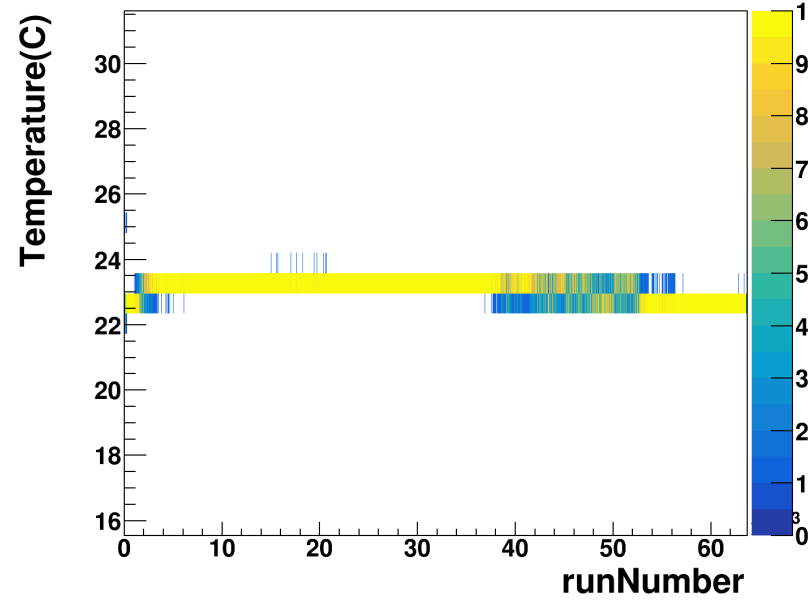
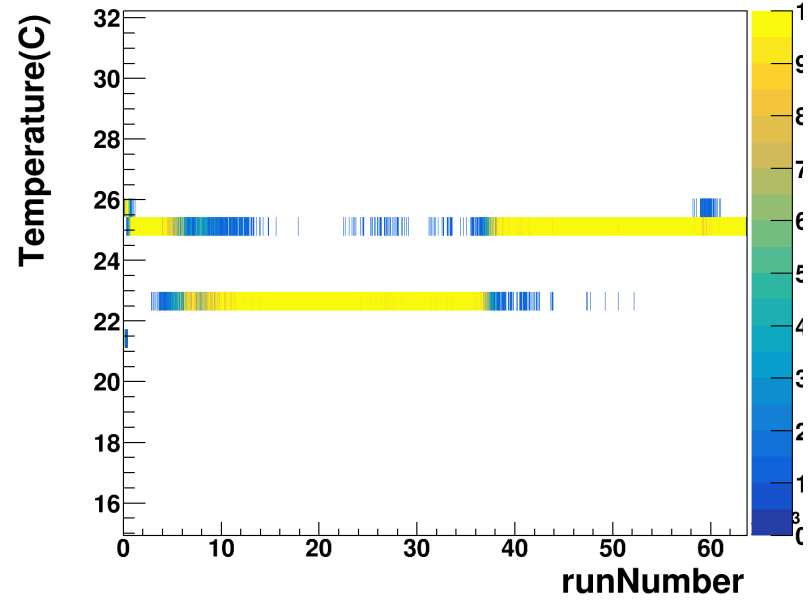
# Kpix Temp (3+4+5)



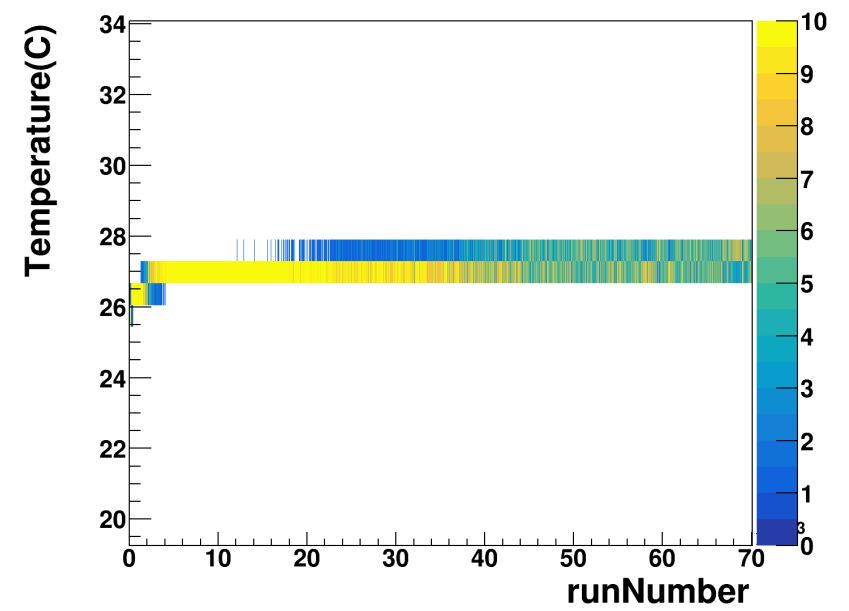
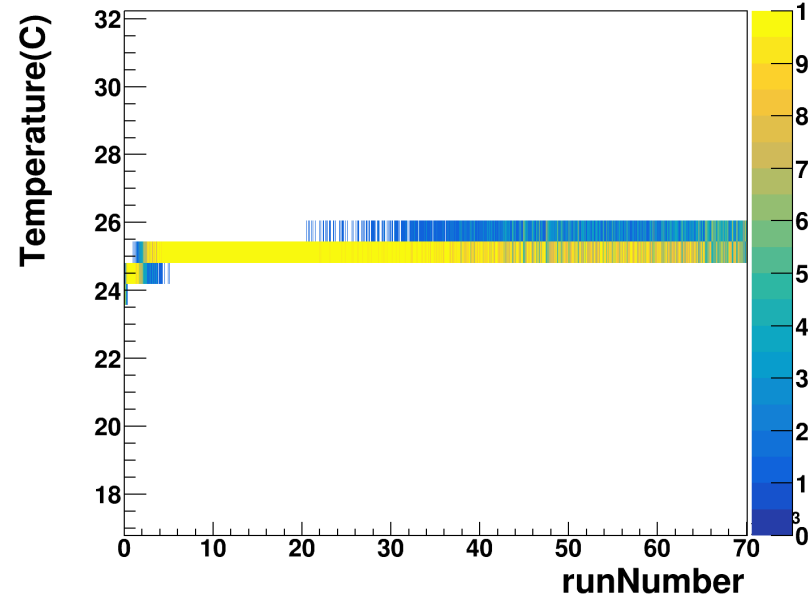
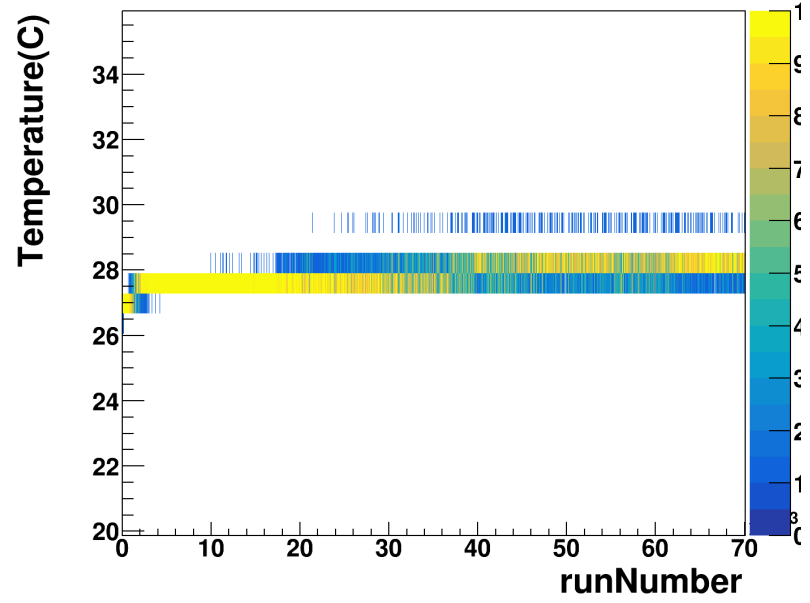
# Kpix Temp (6+7+8)



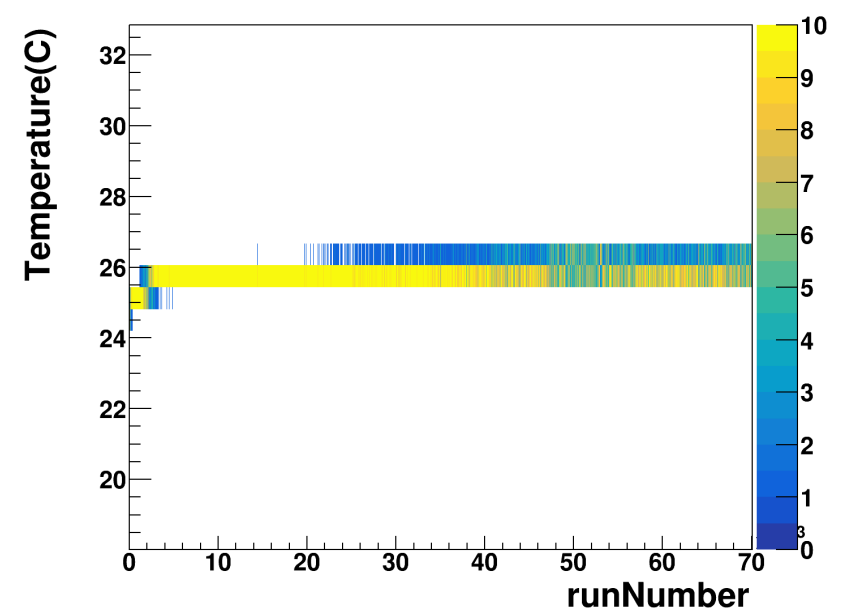
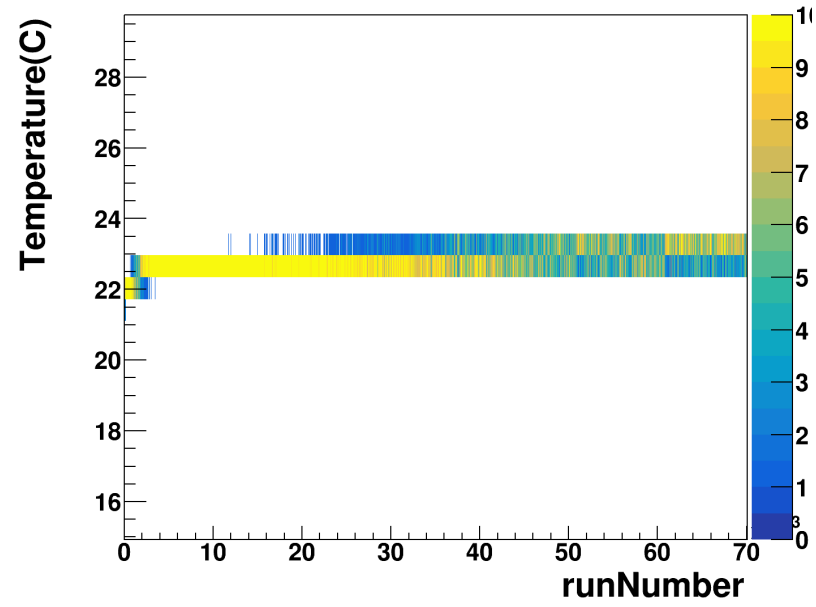
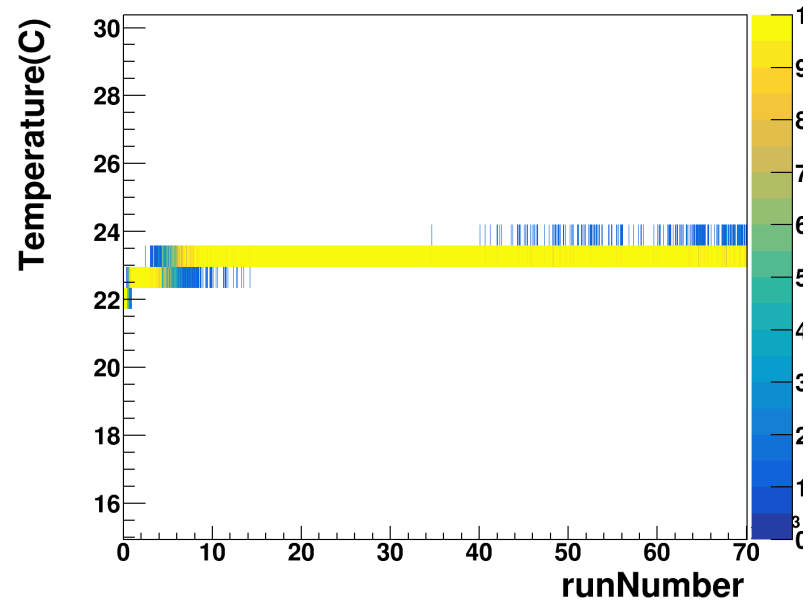
# Kpix Temp (9+10+11)



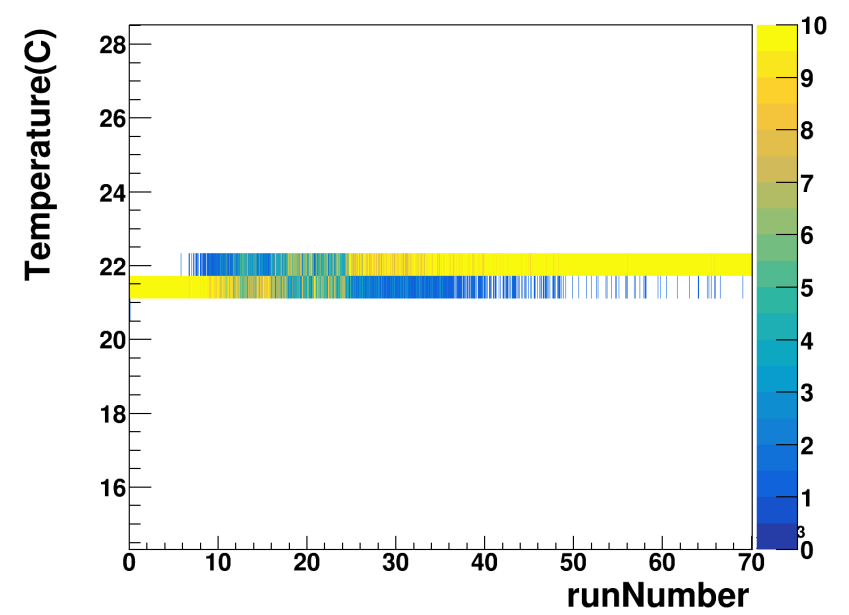
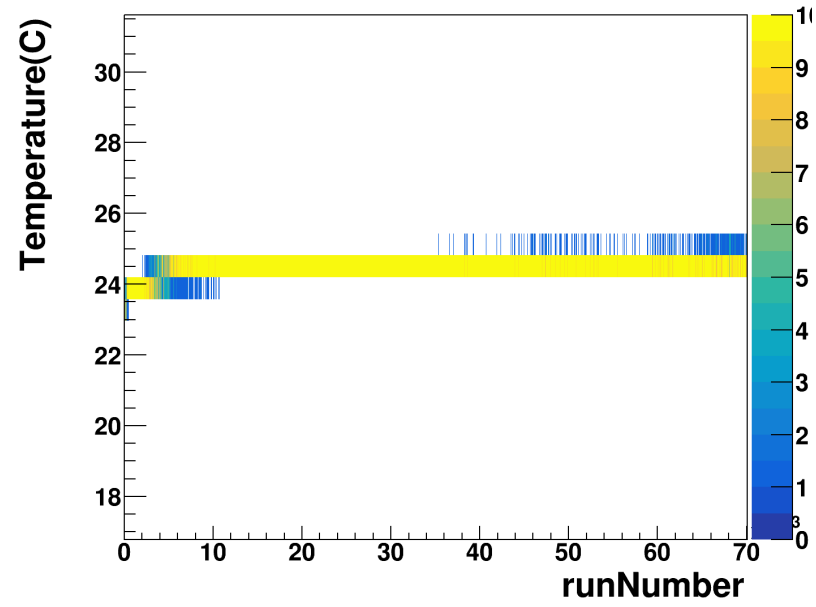
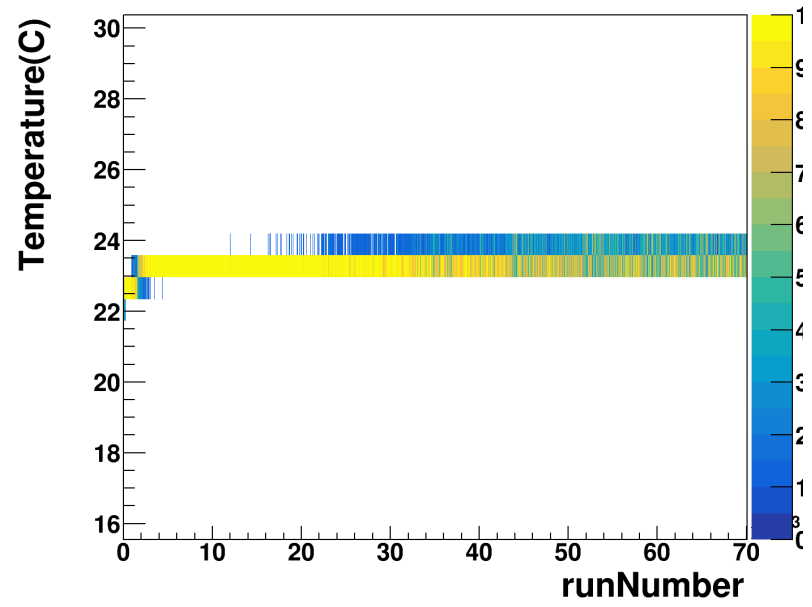
# Kpix Temp (0+1+2)



# Kpix Temp (3+4+5)



# Kpix Temp (6+7+8)



# Kpix Temp (9+10+11)

