

# TOF Digitization

implementation in `DTOFMCRresponse_factory.cc`

- time smearing: NIM A525 (2004)183  
time resolution is position dependent  
 $\sigma(x) = \exp(a + bx)$  with  $\sigma(x = 0) = 0.2ns$
- TDC value not yet implemented
- Energy smearing: [http://www.eljentechnology.com/datasheets/EJ200\\_data\\_sheet.pdf](http://www.eljentechnology.com/datasheets/EJ200_data_sheet.pdf)
- ADC value:  $N=10000$  photons/MeV smear with  $\sigma = \sqrt{N}$   
convert  $N_{tot}$  to photo electrons  
PMT gain factor and ADC resolution