ICRC poster preparation

abstract

Title: Long term performance of the Pierre Auger Observatory

The Surface Array Detector of the Pierre Auger Observatory is comprised of 1664 water Cherenkov detectors, and has been taking data for more than 14 years. We will present the performances and the time evolutions of the surface array, as well as predictions of the future performance. The data quality and long term behaviors of the fluorescence detectors, which are composed of 27 telescopes, will also be presented.

170119 Long term meeting
Koun Choi (Université Libre de Bruxelles)

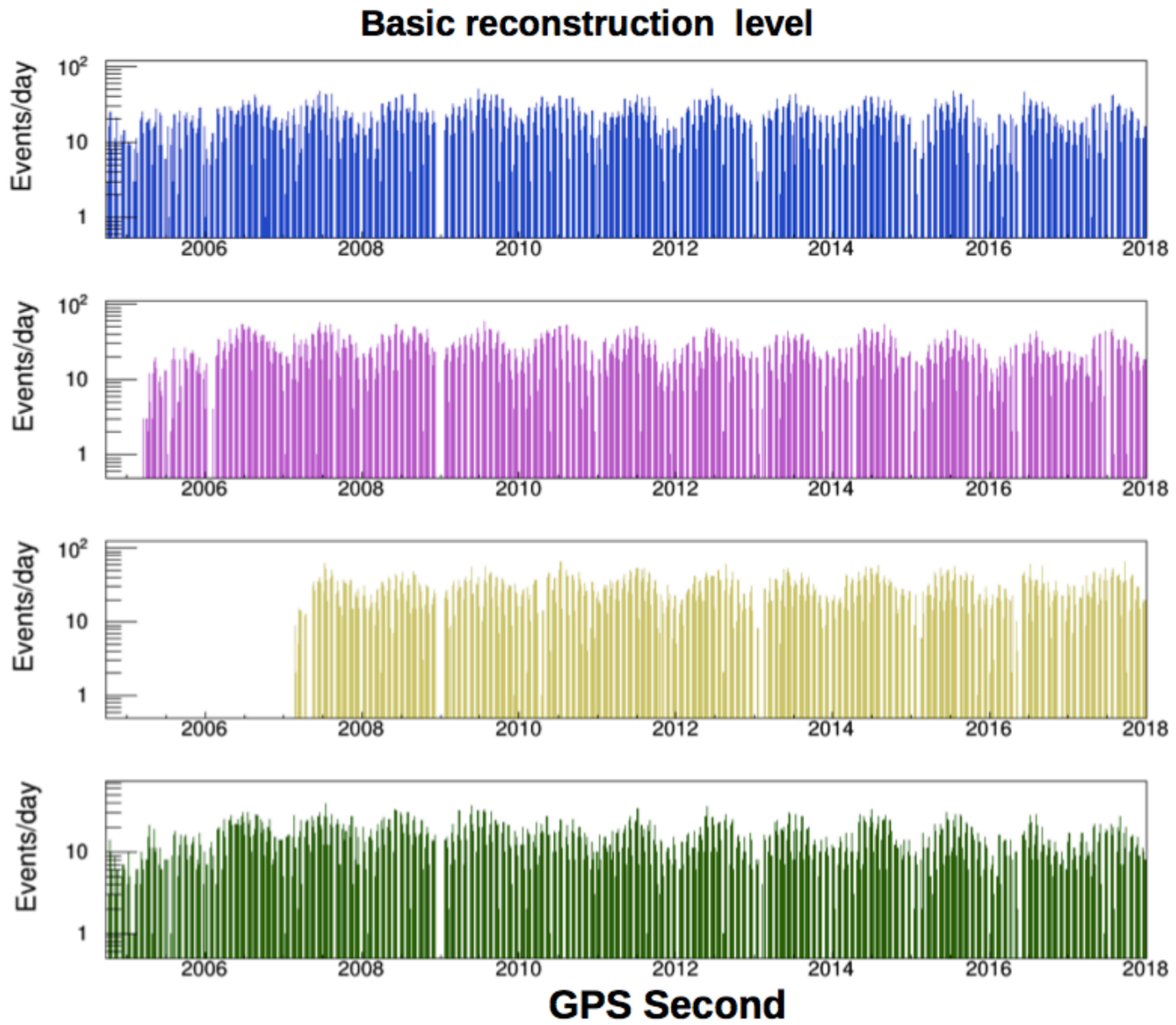
1. FD event rate

Leones

Morados

Amarilla

Cohiueco



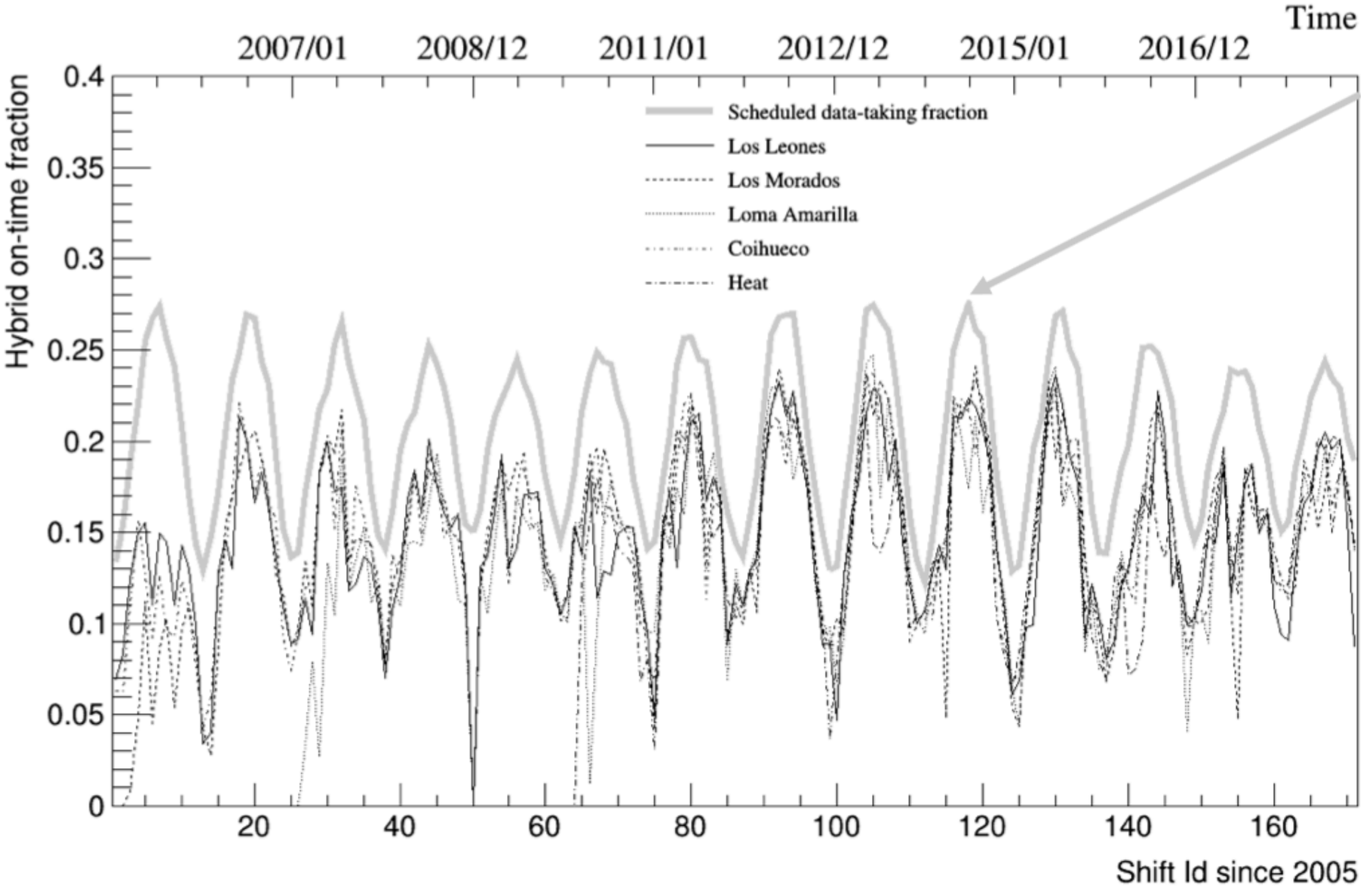
raw event rate

to be updated (F.Salamida, L.Perrone)

event rate after X max/spectrum selection(to show efficiency)

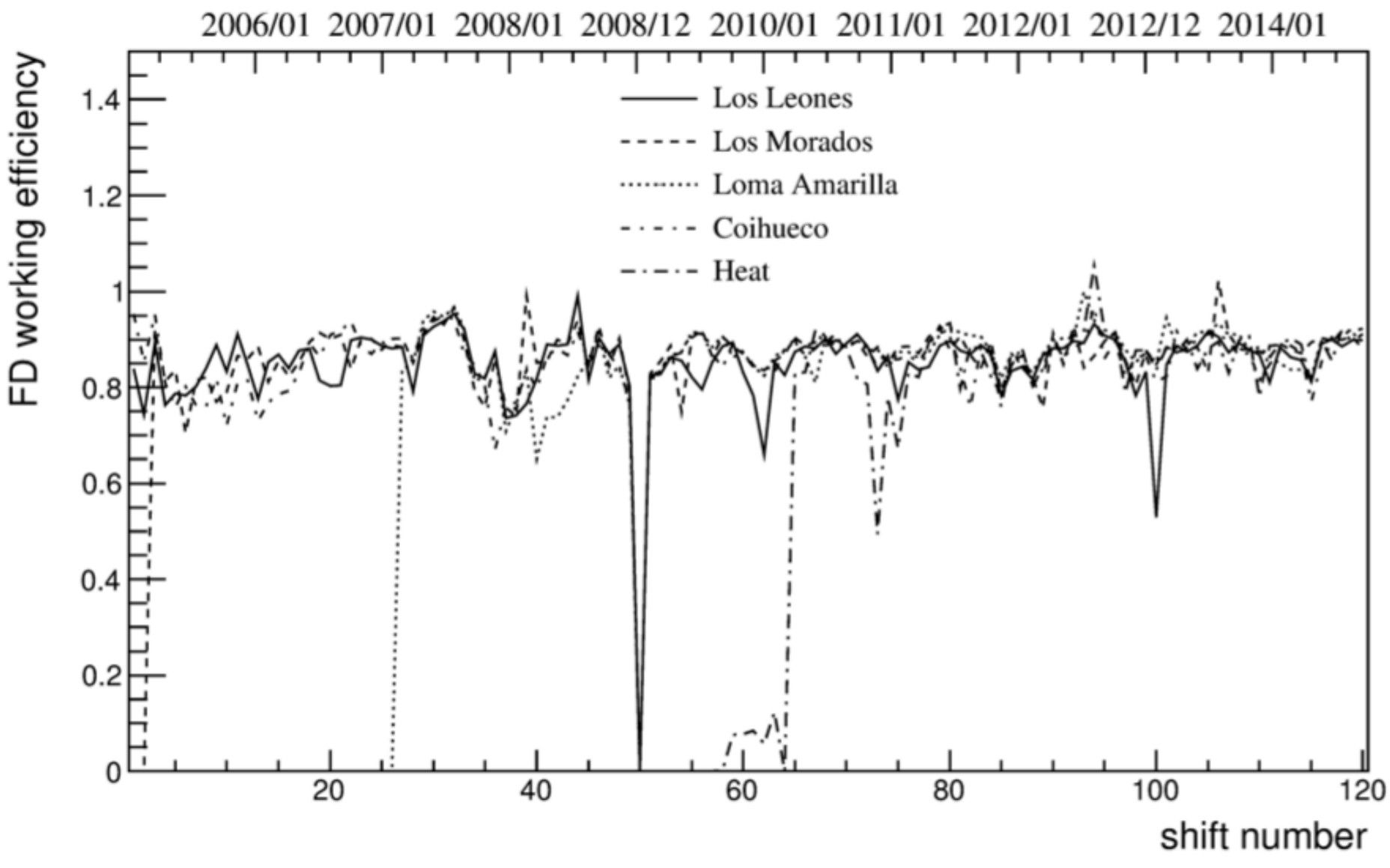
to be produced

2. FD uptime



to be updated (F.Salamida, L.Perrone)

3. FD Efficiency

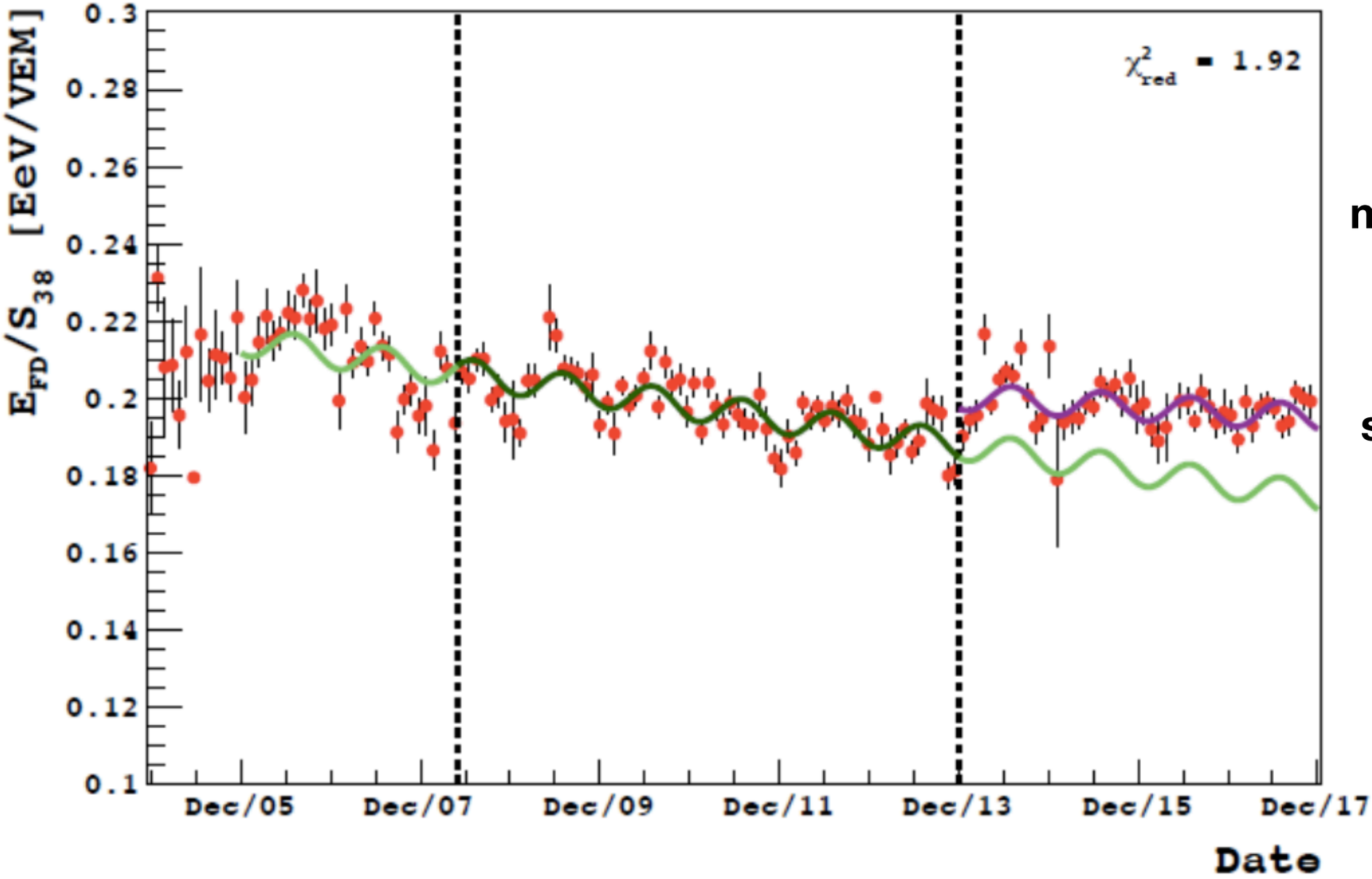


to be updated
(2015 NIM paper)

4. FD/SD cumulative # of events

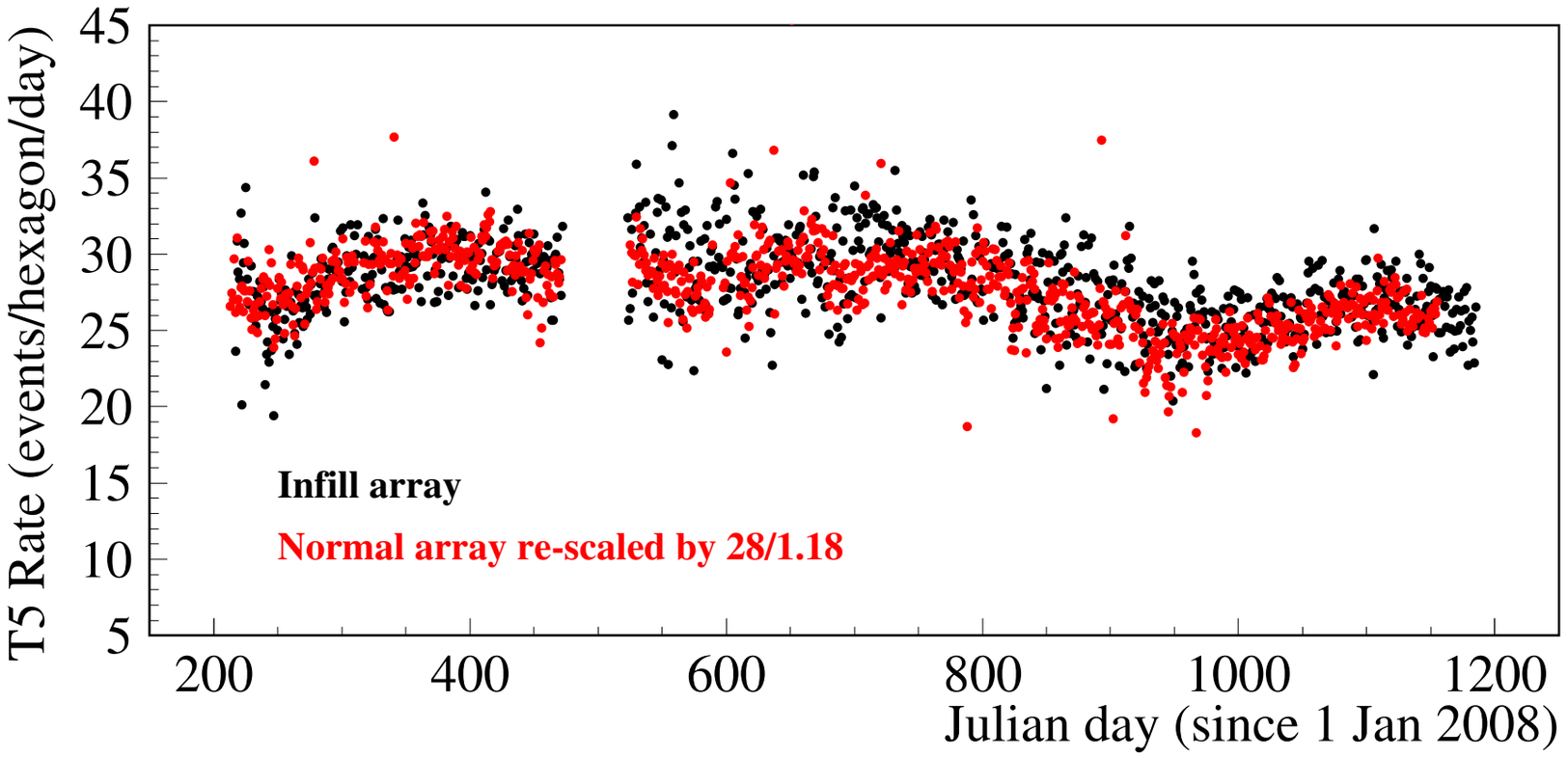
to be done

4. E_{FD}/S_{38}?



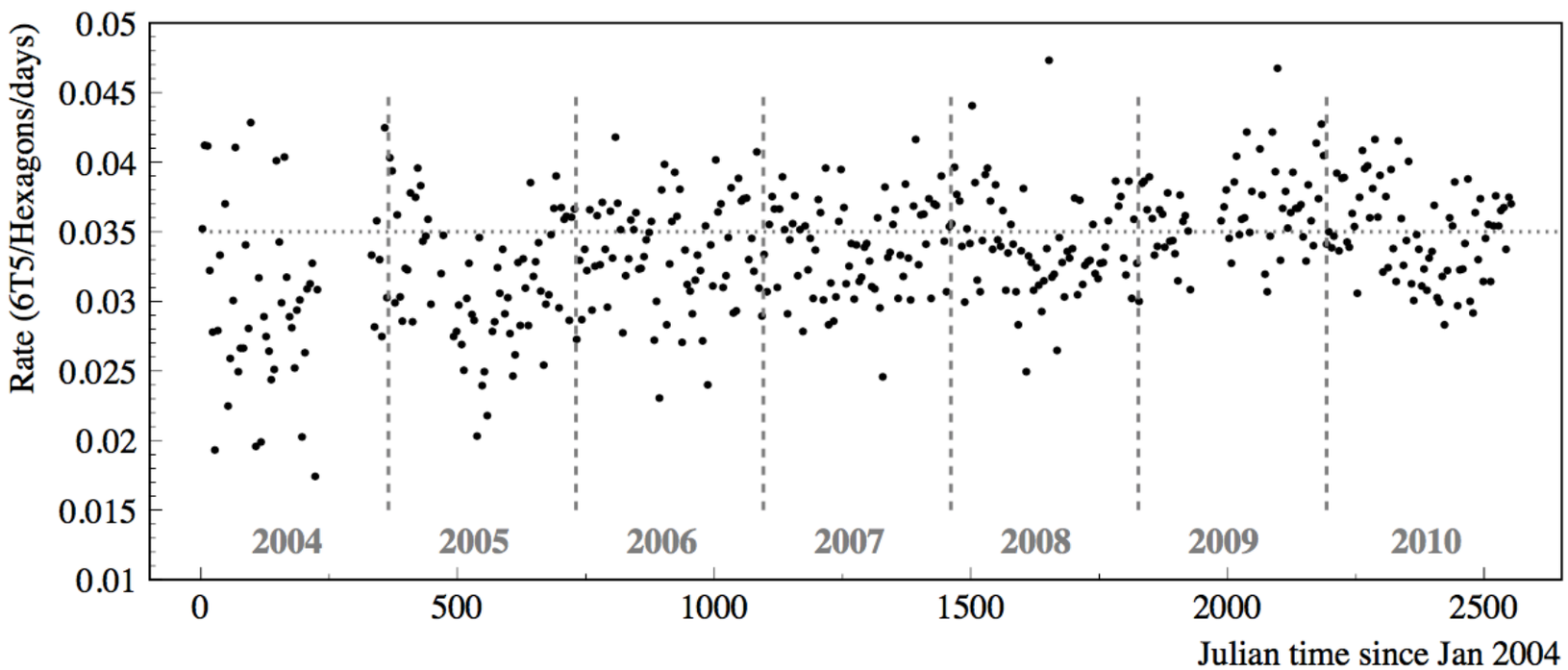
modified version of this plot(Phong's thesis) emphasizing the stability in the last years

5. SD event rate



750/1500 m arrays (all events)

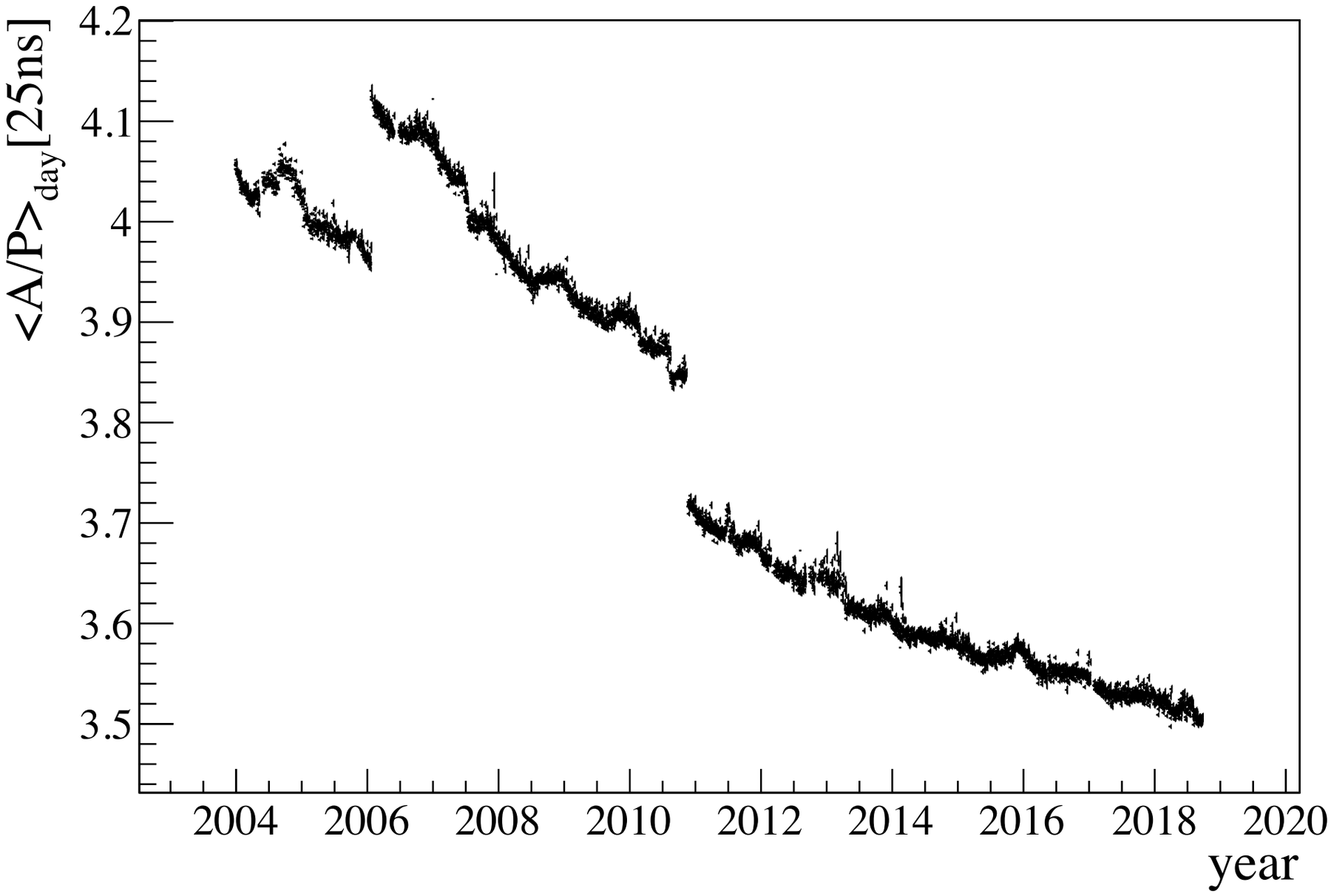
to be updated (I. Maris, R.Sato, C.Bonifazi, 2011 ICRC)



750/1500 m arrays (above the threshold)

to be updated R.Sato, 2011 ICRC)

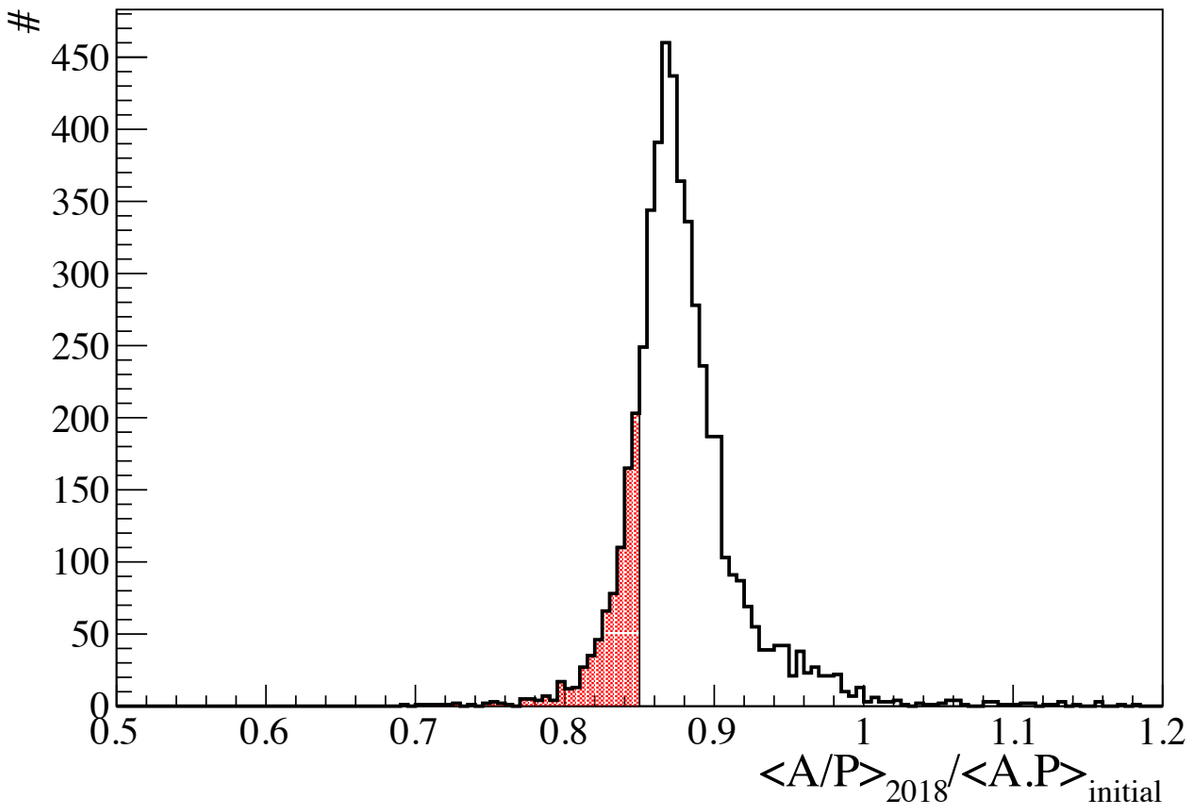
6. an example A/P profile



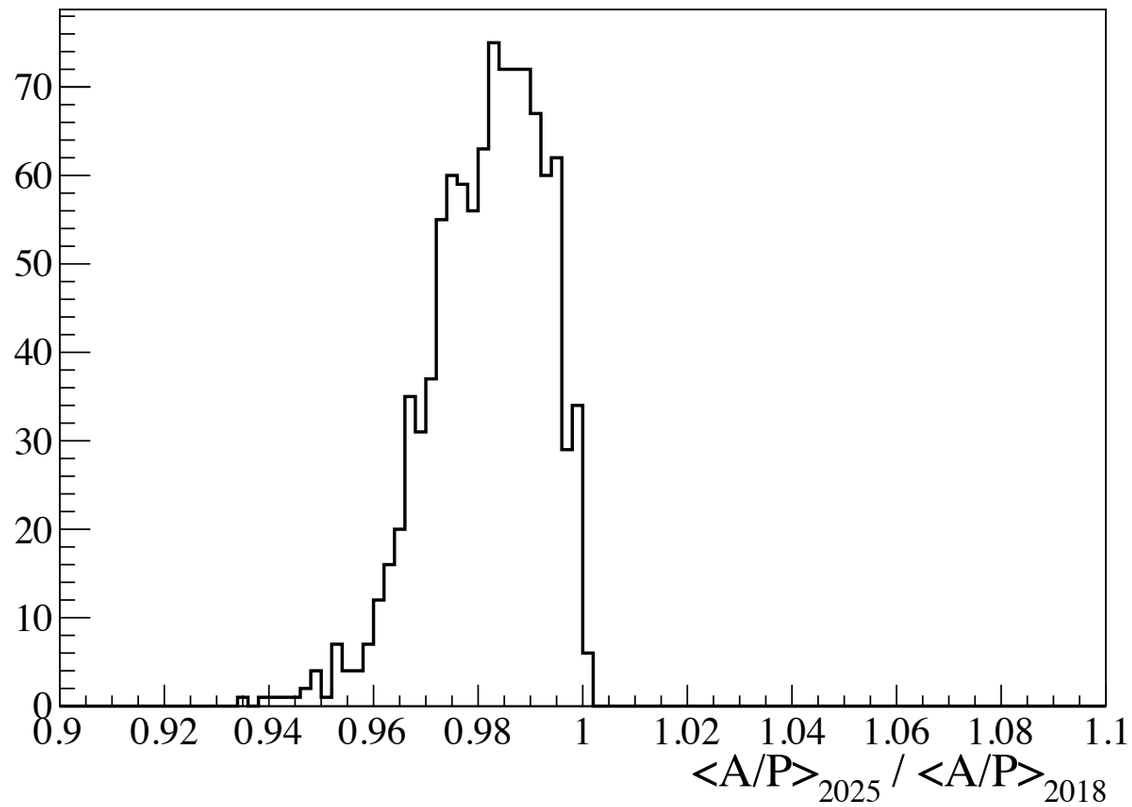
to be updated
(profile without jumps)

6. A/P ratio expected in 2025

current status



future expectation



Brainstorming

- mean A/P of air showers
- mean X_{max} vs time
- weighted(for the flux) mean of energy of events(FD/SD) vs time above certain threshold
- SD uptime
- battery/solar panel lifetime
- attenuation parameters(CIC) vs time
- …