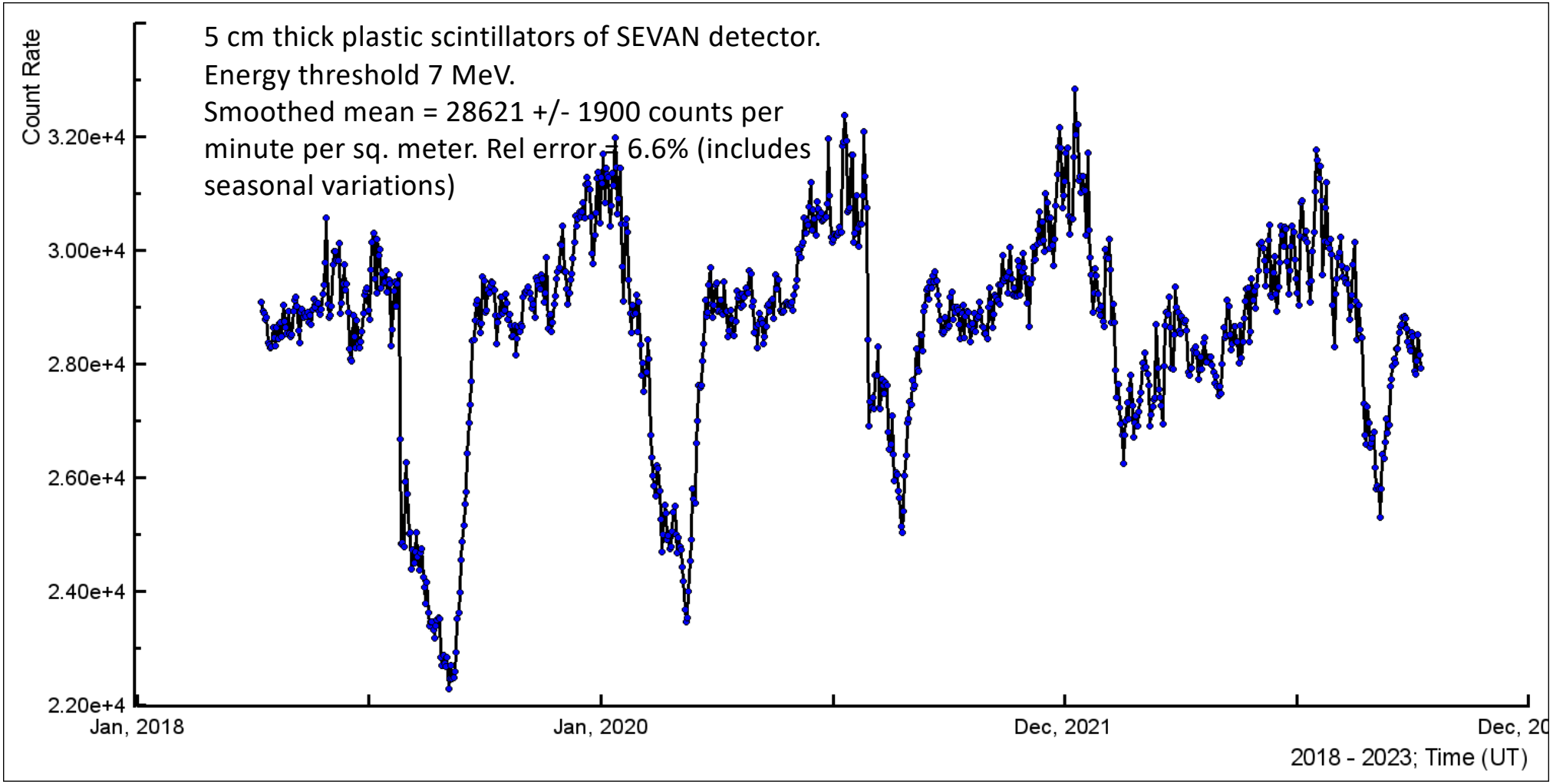
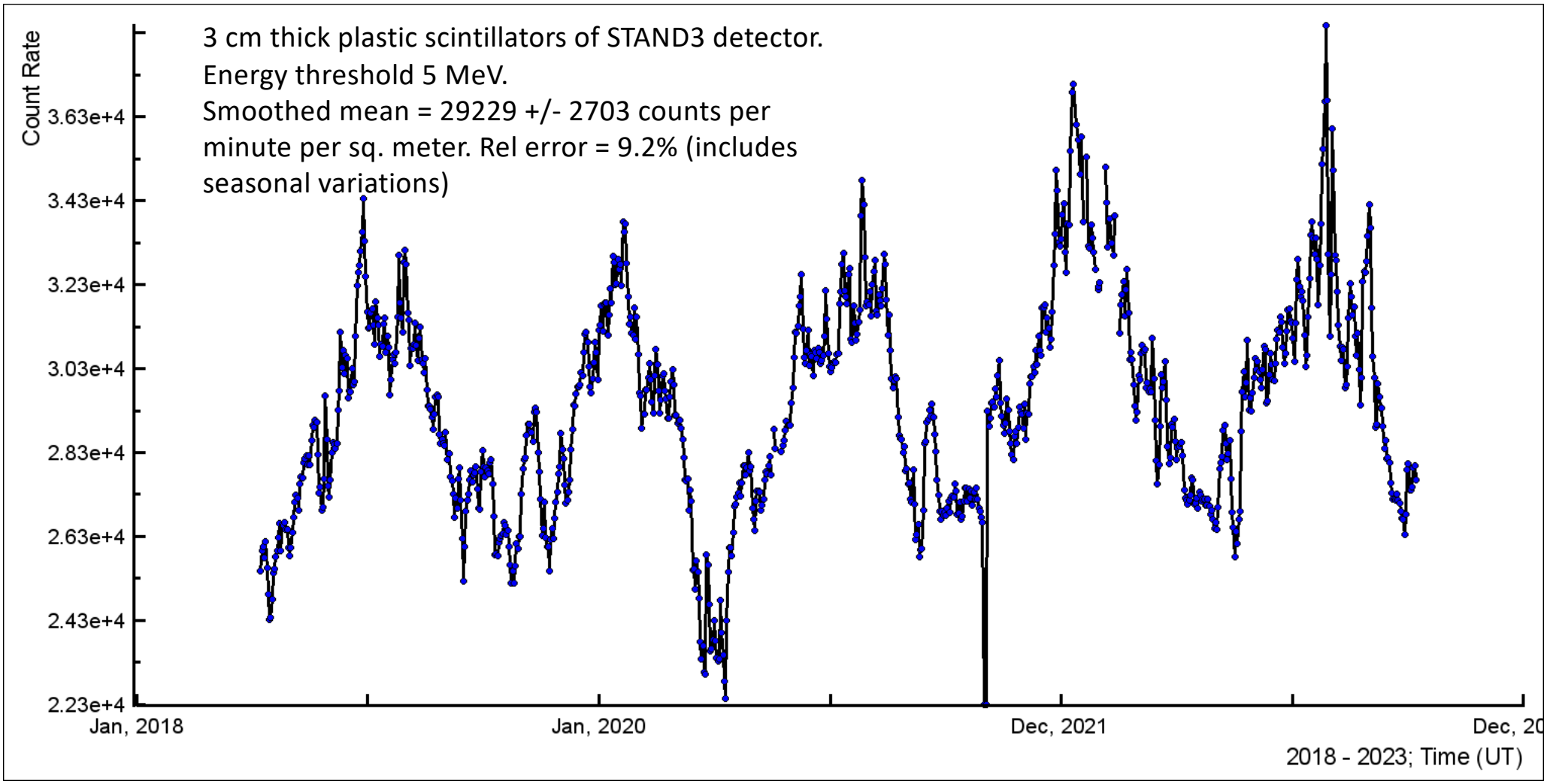
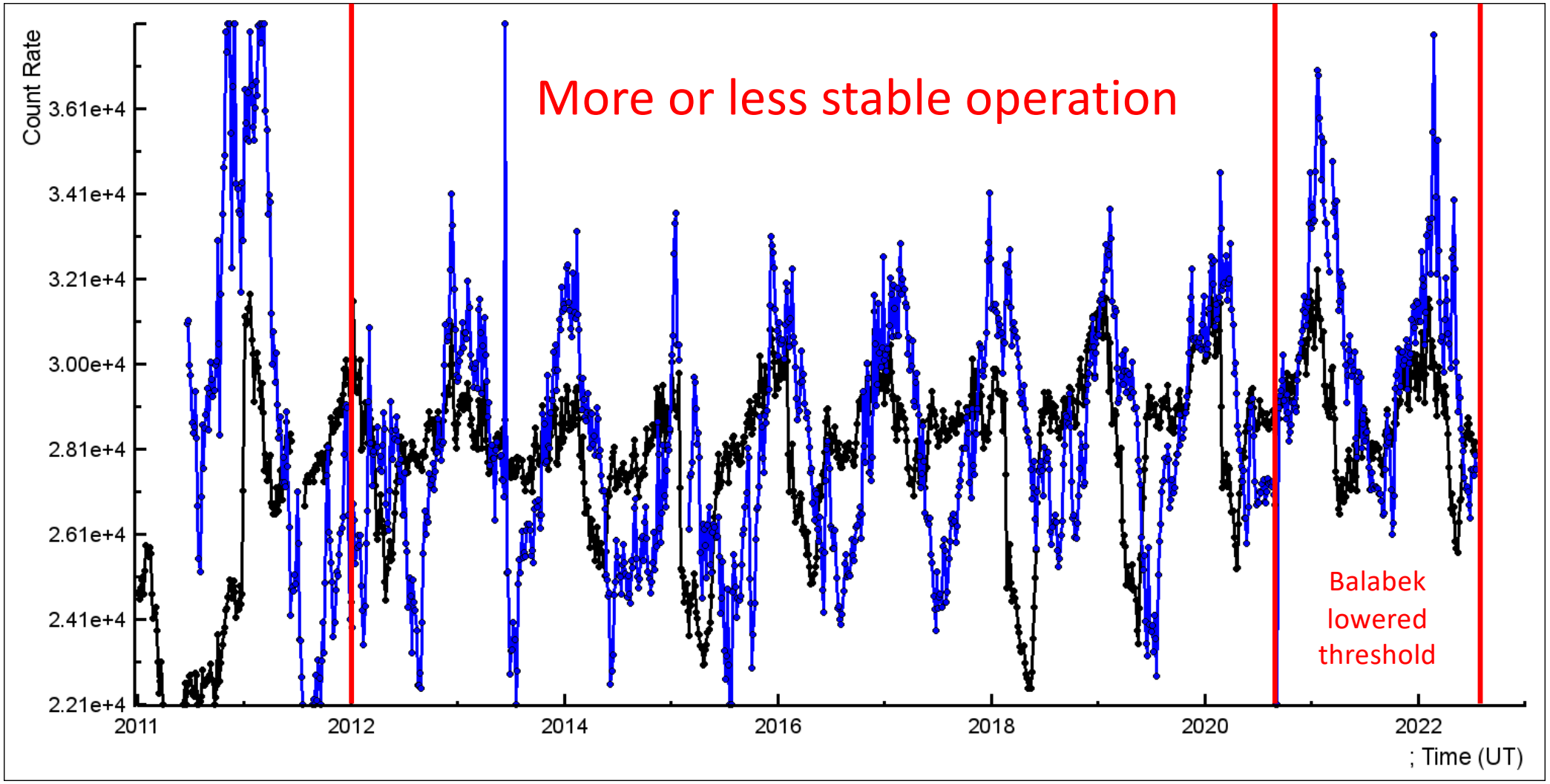
Cosmic Ray intensity measured on Aragats 3200m asl

Measurements of almost all species of Cosmic rays started on Aragats 80 years ago with Geiger counters.

- Last 20 years, cosmic ray flux has been measured with various particle detectors and spectrometers. We measure the intensity and energy spectra of electrons, positrons, gamma rays, neutrons, and muon in the energy range 0.3 – 100 MeV (data available from http://www.crd.yerphi.am/adei)
- Simultaneously, we measure electric and geomagnetic fields, lightning occurrences, and weather parameters.
- The cosmic ray intensity depends on the season (temperature, snow above buildings, atmospheric pressure, gradient of temperature tens of kilometers above the station).
- The temperature dependence of electronics and detector material also influences the count rate.
- The picture below presents the five-year count rate of the SEVAN detector's upper 5cm thick scintillator. The count rate is measured each minute, and the sensitive area of the detector is 1 m^2.


5 cm thick plastic scintillators of SEVAN detector.
Energy threshold 7 MeV.
Smoothed mean = 28621 +/- 1900 counts per minute per sq. meter. Rel error = 6.6% (includes seasonal variations)
Count Rate
3.20e+4
3.00e+4
2.80e+4
2.60e+4
2.40e+4
2.20e+4
Jan, 2018
Jan, 2020
Dec, 2021
Dec, 20
2018 - 2023; Time (UT)


3 cm thick plastic scintillators of STAND3 detector.
Energy threshold 5 MeV.
Smoothed mean = 29229 +/- 2703 counts per minute per sq. meter. Rel error = 9.2% (includes seasonal variations)
Count Rate
3.63e+4
3.43e+4
3.23e+4
3.03e+4
2.83e+4
2.63e+4
2.43e+4
2.23e+4
Jan, 2018
Jan, 2020
Dec, 2021
Dec, 20
2018 - 2023; Time (UT)


More or less stable operation
Balabek
lowered
threshold
Count Rate
3.61e+4
3.41e+4
3.21e+4
3.00e+4
2.81e+4
2.61e+4
2.41e+4
2.21e+4
2011
2012
2014
2016
2018
2020
2022
; Time (UT)