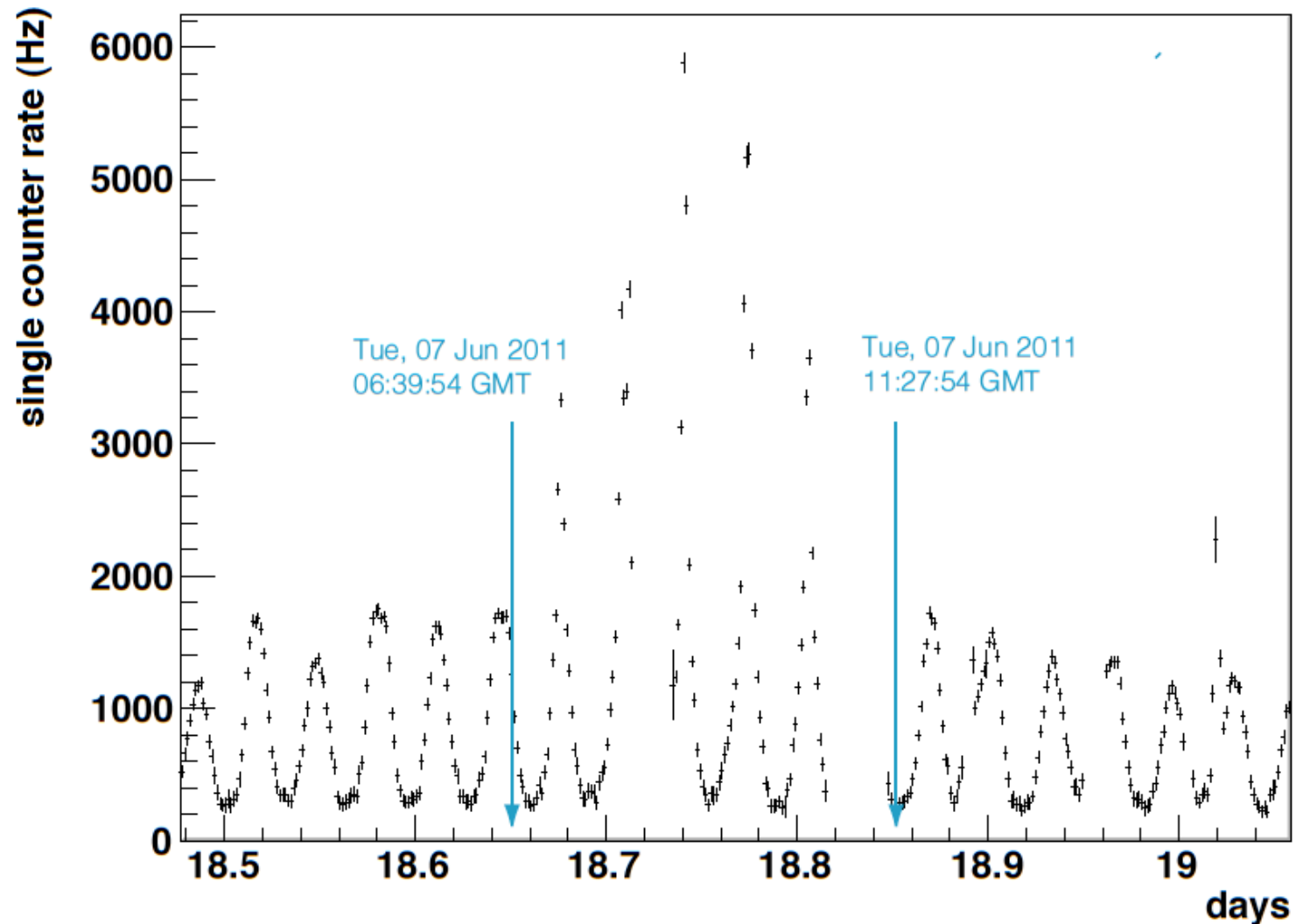

7 June 2011 solar flare

A. Contin

TOF Group, October 2011

The event

On June 7 a solar flare happened, marked by a sudden increase of the total rate in TOF counters. The flare is seen only at large latitudes because the particle momentum is low.

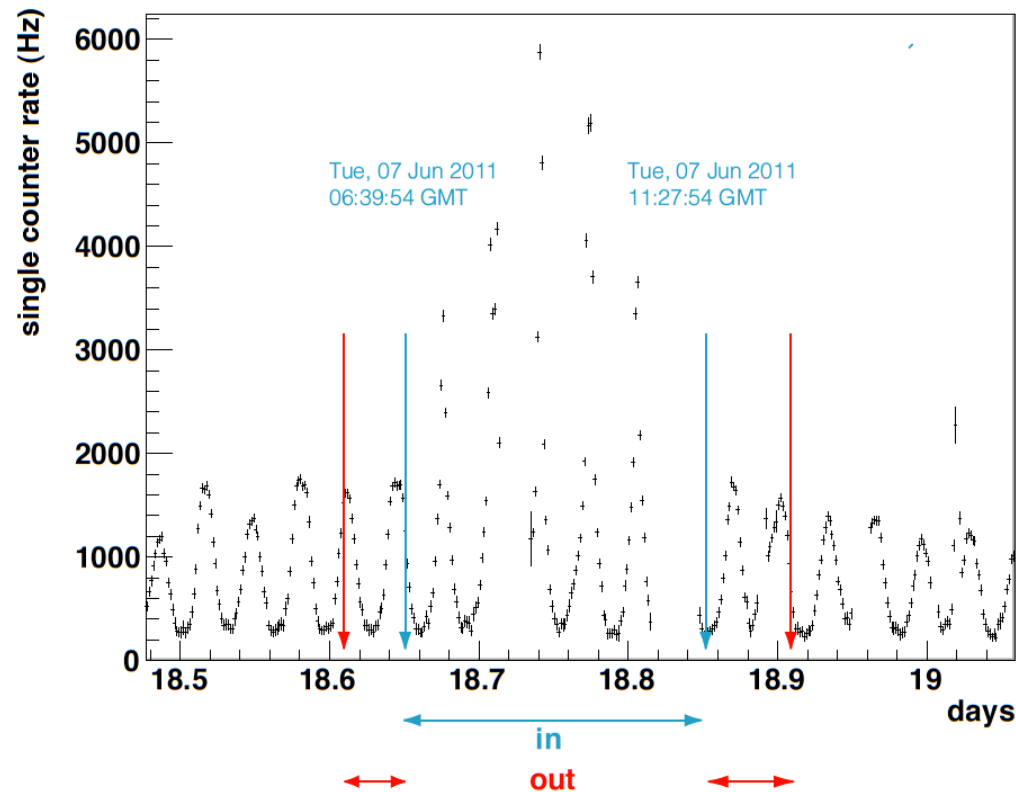


Fast analysis

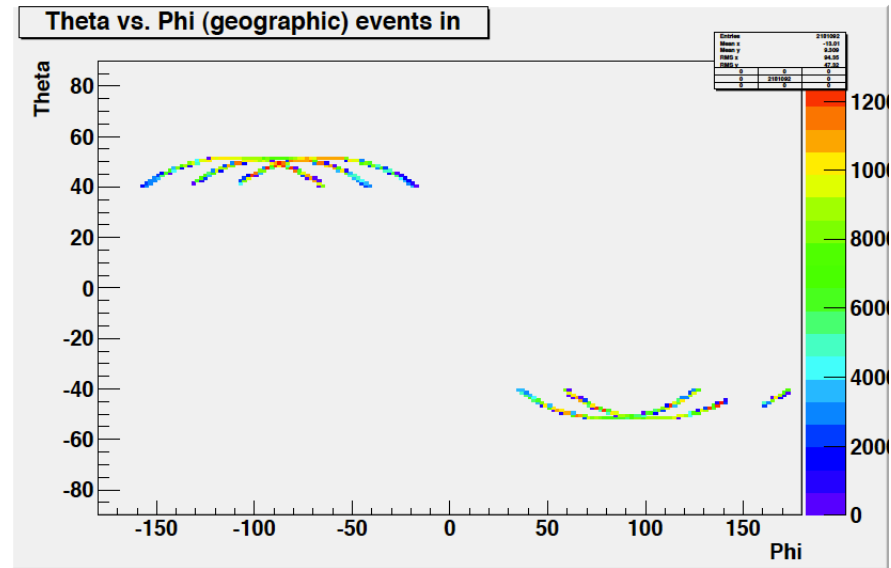
A fast analysis has been done with the following selection:

1. all triggers
2. at least one good track ($\text{Chi}^2 < 10$, at most one central plane missing)
3. beta measured with four TOF clusters (one per layer)
4. charge measured by TRACKER (function `TrCharge::GetMean`): $Z = \frac{\sqrt{\text{TrCharge}::\text{GetMean}}}{6.2}$
5. absolute geographic latitude greater than 40°

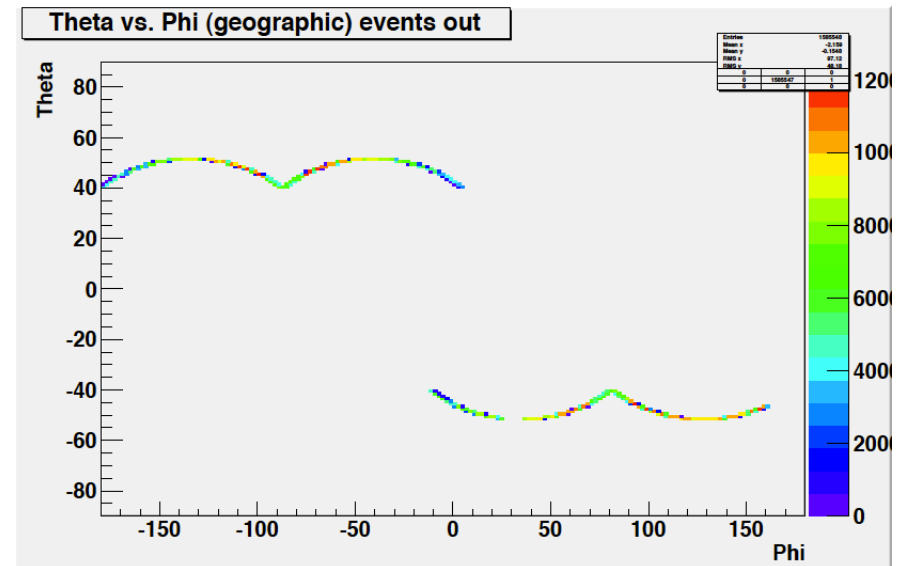
using as control sample the events before and after the flare.



Latitude/longitude

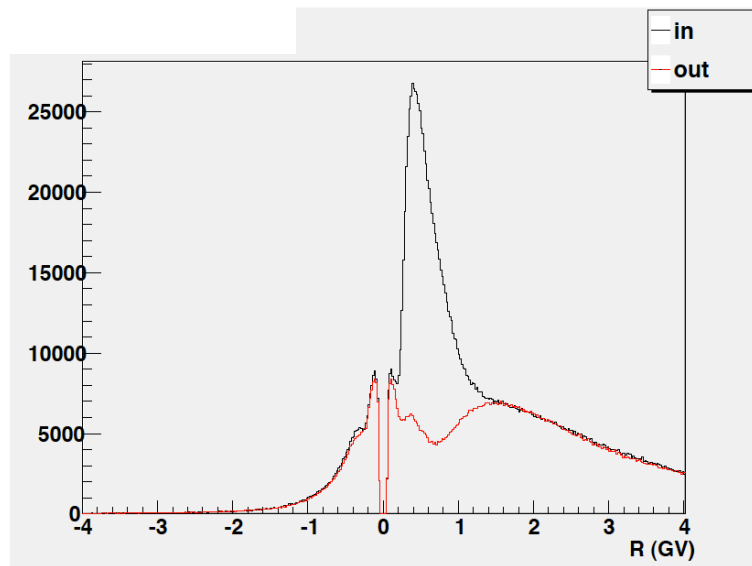


in



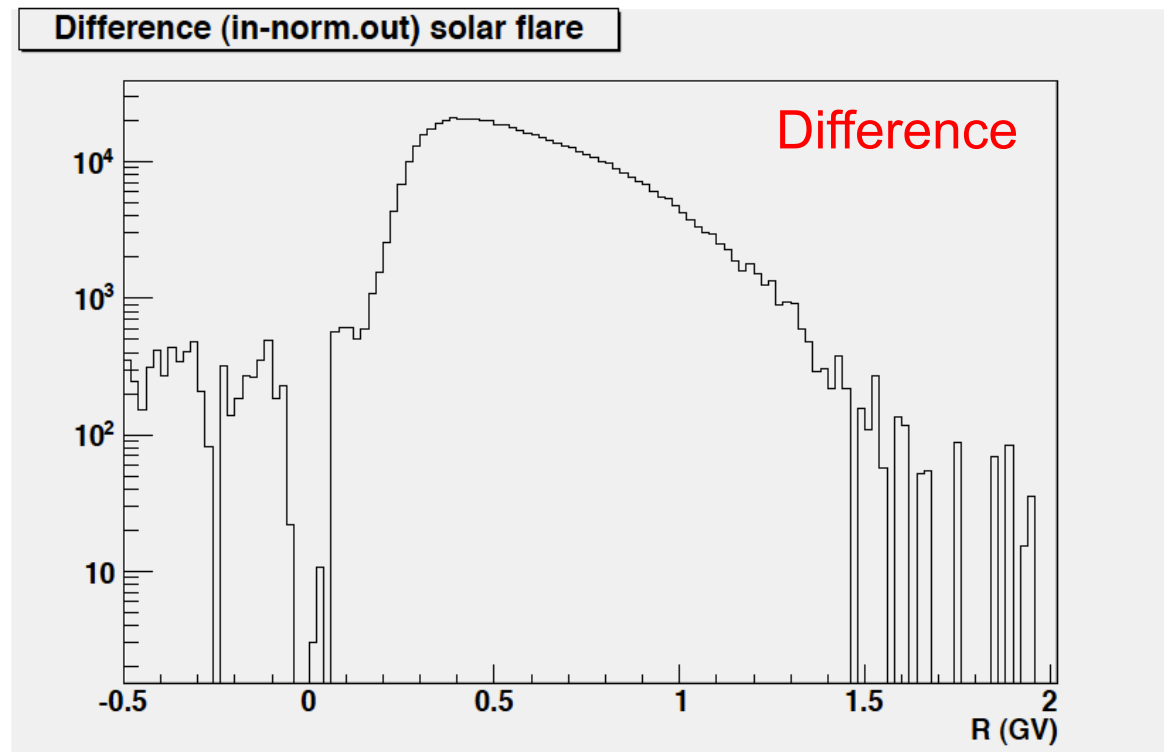
out

Rigidity distribution of particles in the flare

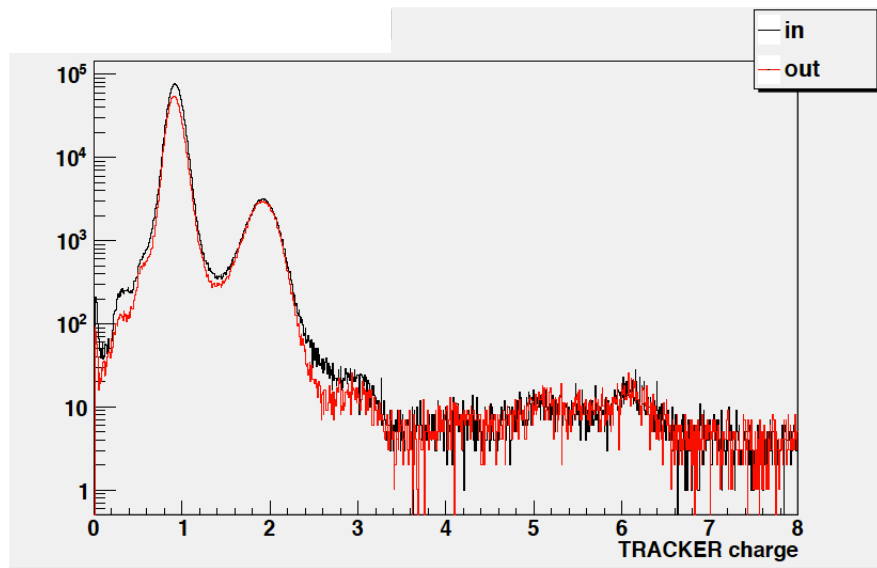


The “out” spectrum has been normalized to the “in” spectrum at 1.5-2 GV

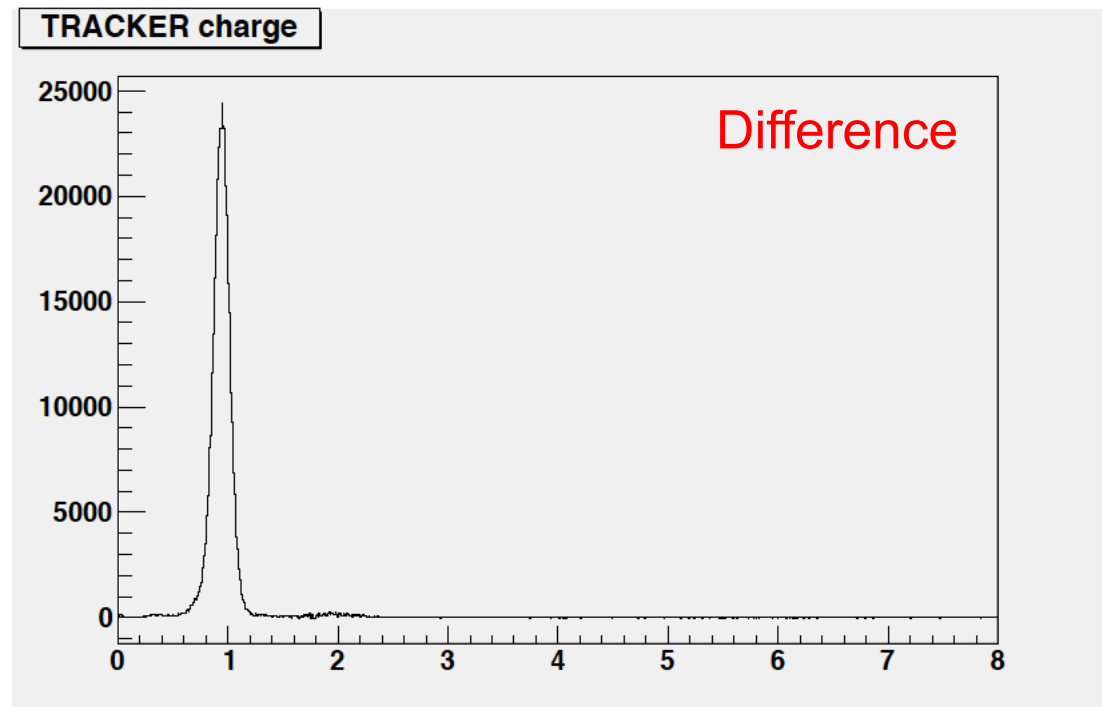
The cut below ~ 0.4 GV is probably due to the detector acceptance



Charge distribution of particles in the flare



The flare is composed only by Z=1 particles



Beta distribution of particles in the flare

The flare is composed only by protons

