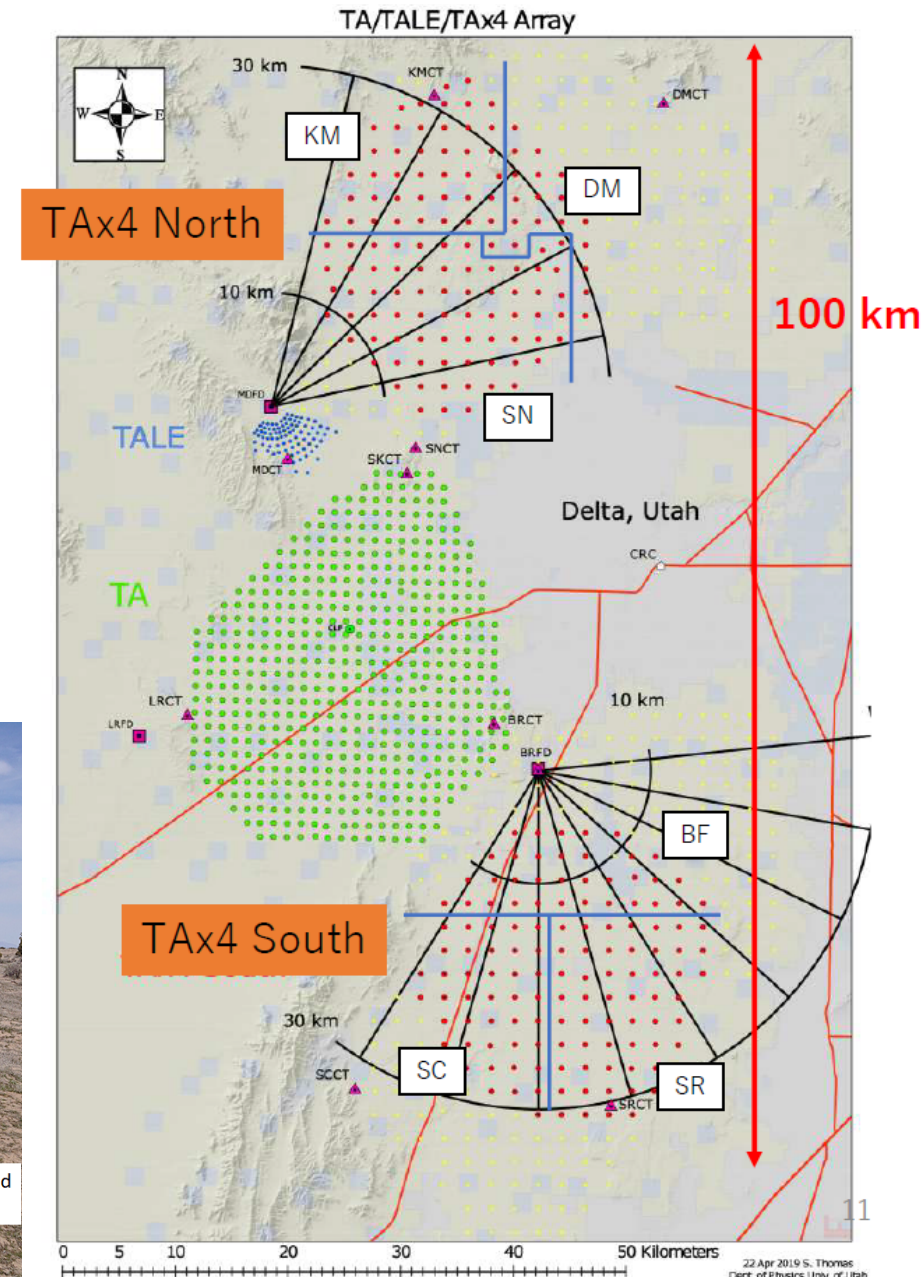
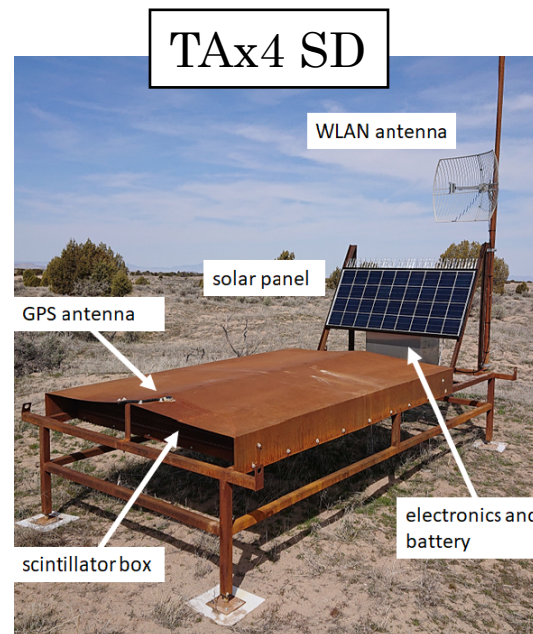


TAx4 SD

- TA found evidence for anisotropies such as the TA hotspot of highest-energy cosmic rays
- Verify the anisotropy evidence by quadrupling TA (TAx4) to increase the data collection speed
 - TAx4 SDs are deployed on a square grid with 2.08 km spacing (1.2 km for TA SDs)
 - The current TA x4 SD array consists of 257 SDs
 - Covering ~2.5 times TA SD (including TA SD)

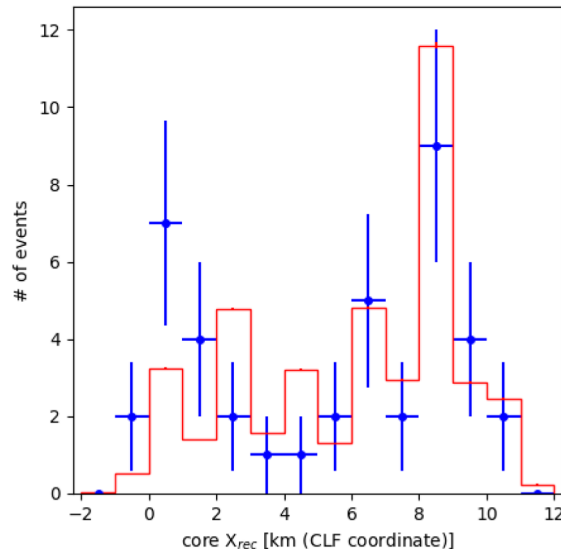


Data/MC comparison

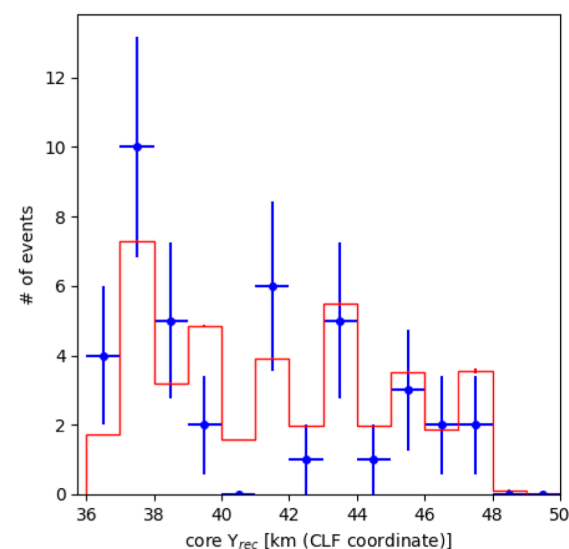
- The real collected by KM sub-array (about 1/8 of the total added) for 1 year (Oct. 8, 2019 to Oct. 7, 2020) are used.
- The data and MC comparison is performed after the quality cuts of :
 - (i) $N_{SD} \geq 4$,
 - (ii) zenith angle $\theta < 55$ degrees,
 - (iii) $\chi^2/\text{ndof} < 4$ (geometry and lateral distribution fit),
 - (iv) shower directional error $\sigma_{\text{dir}} < 8$ degrees,
 - (v) fractional error of S800 < 0.50 (S800 : particle density at 800 m from the shower axis),
 - (vi) distance from the edge of the array < 400 m.

The area of MC histogram is normalized to that of real data for each plot.

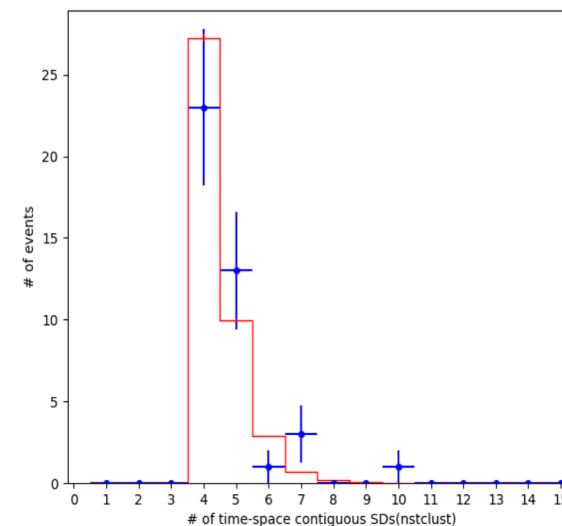
Core position (west-east)



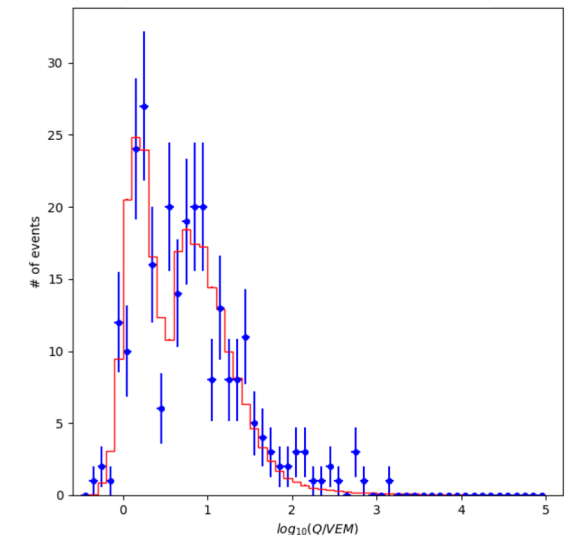
Core position (south-north)



No. of contiguous SDs/event

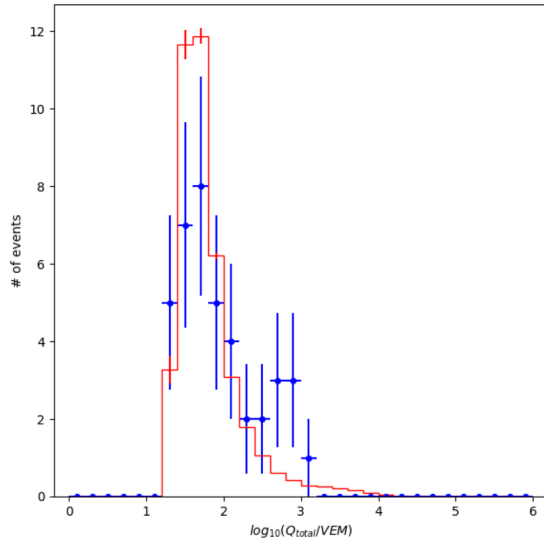


Signal/detector

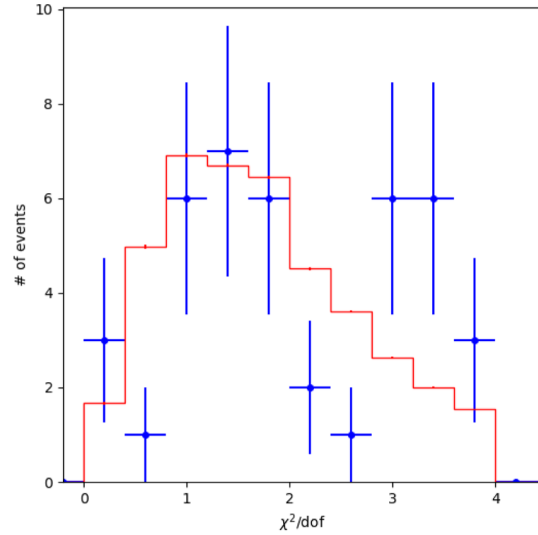


Data/MC comparison

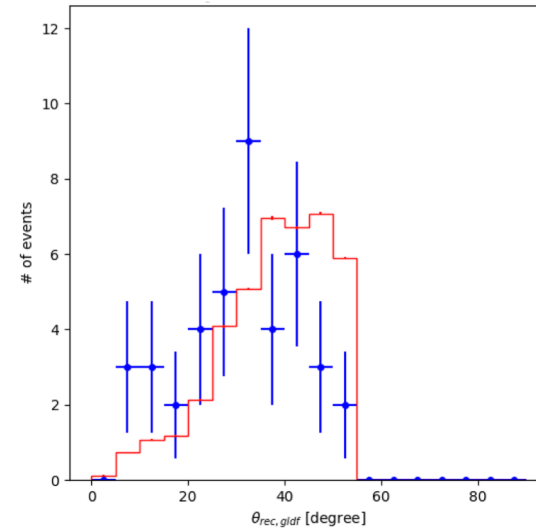
Signal/event



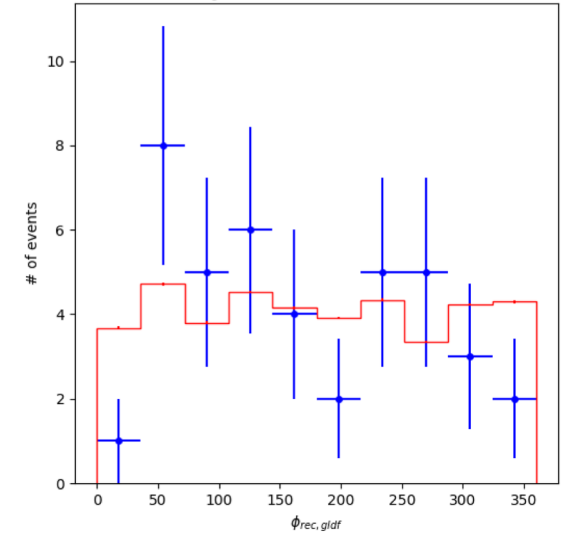
$\chi^2/\text{dof}(\text{combined})$



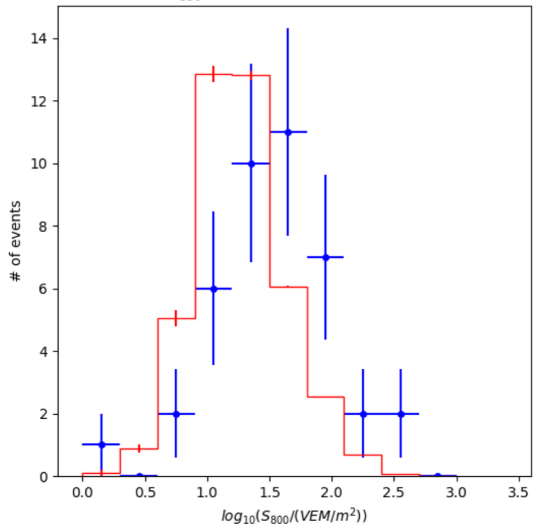
θ_{rec}



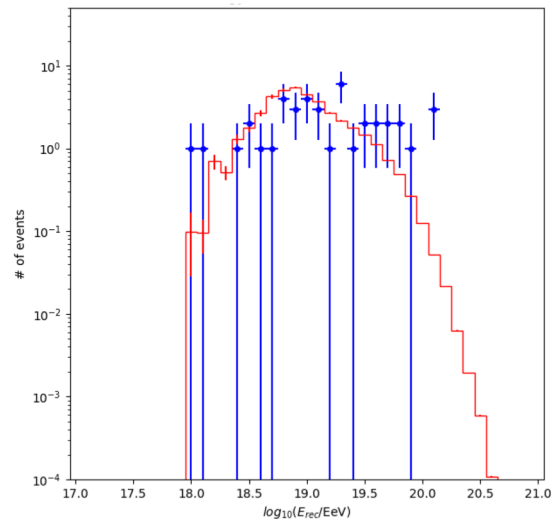
ϕ_{rec}



S_{800}



Erec



The area of MC histogram is normalized to that of real data for each plot.

The real data and the MC simulation agree within statistical error