

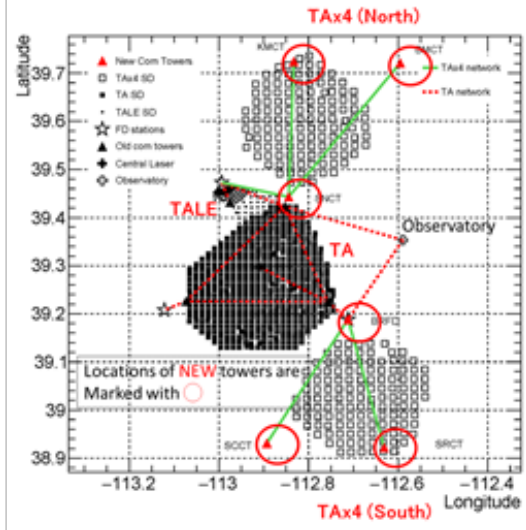
Study on the cosmic ray intensity variation using scintillation counters for air shower observation

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Telescope Array Detectors

Total detector area for atmospheric muon : 1500 m²+



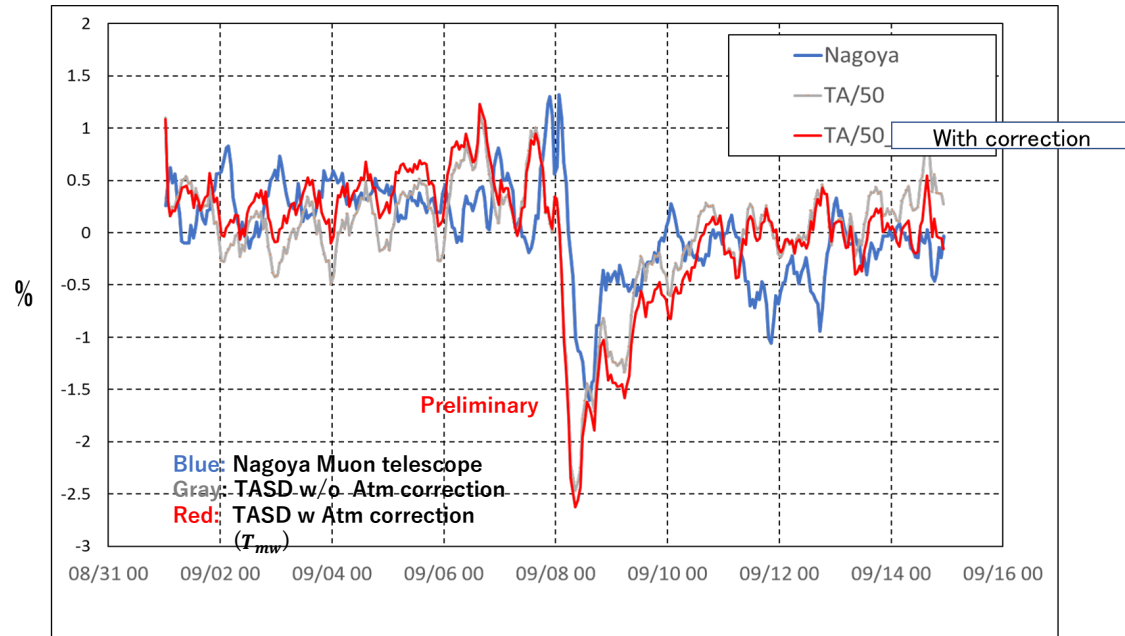
Three observations of different energies

- TA
 - 10¹⁸eV ~ 10²⁰eV
- TALE
 - 10¹⁶eV ~ 10^{18.5}eV
- TAx4
 - 10^{19.7}eV ~ 10²⁰eV

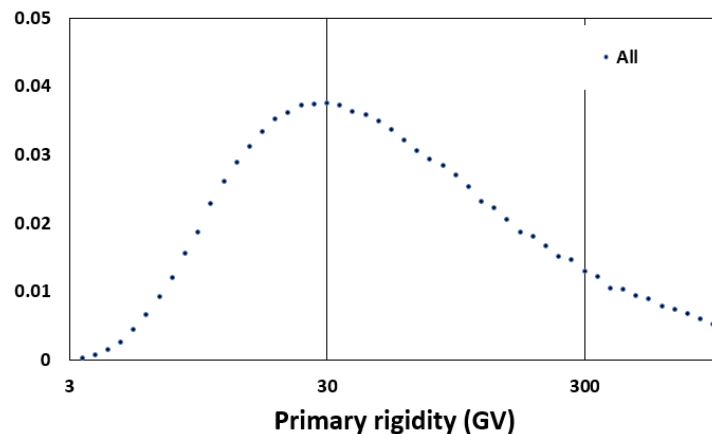
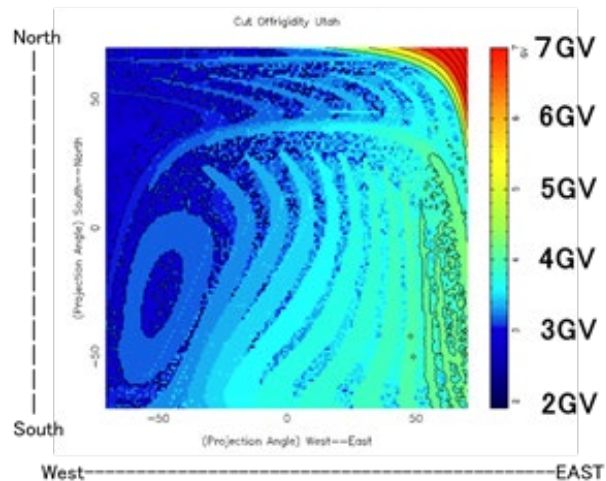


TASD:

- Large area surface → collect scintillation light with WLS fiber
- Thin scintillator → Low threshold. (~30MeV)
- Sensitive to EM / Mu



Geomagnetic Cutoff : 3GV @vertical



Summary

Using Telescope Array Surface Detector, we obtained data comparable with other observations.

- ✓ Total detector area 1500m²
- ✓ Maximum time resolution 1min
- ✓ Count rate ~ $\frac{750\text{Hz}}{3\text{m}^2}$
- ✓ Trigger threshold : ~ 20 – 30MeV for electron, muon
- ✓ Geomagnetic cut off 3GV@vertical
- ✓ MedianRigidity: 40GV