



A study of analysis method for the identification of UHECR source type

PoS(ICRC2021)242

Fugo Yoshida, Yuichiro Tameda and for the Telescope Array Collaboration

- **What is this contribution about ?**
 - The origin of Ultra-High Energy Cosmic Rays (UHECRs) is still unknown. To explore them, we pursued the origin-dependence of the clustering of cosmic rays observed in Telescope Array (TA) experiment from simulations of cosmic rays arriving at the earth from candidate origins.
- **Why is it relevant / interesting ?**
 - We thought that if we could obtain simulation results that would reproduce the results of the TA experiment, we could identify the species from which the UHECRs originated.
- **What have we done?**
 - We simulate cosmic rays arriving at Earth from radio galaxies, a strong candidate for the origin of UHECRs, presented in “Rachen et al., PoS (ICRC2019)396”.
- **What is the result?**
 - When assuming three types of ExtraGalactic Magnetic Field (EGMF) and two types of nuclei, each show a characteristic distribution structure.

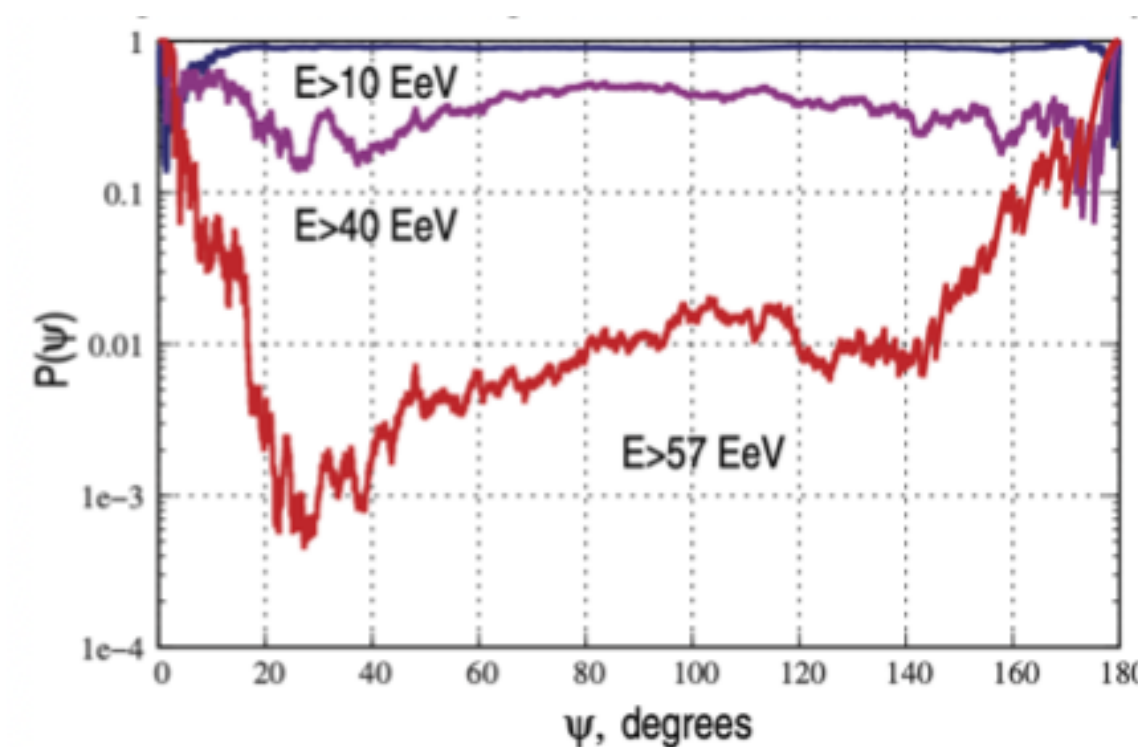


Fig. 1 : The results show the excess clustering of events at each energy threshold detected in the TA experiment.

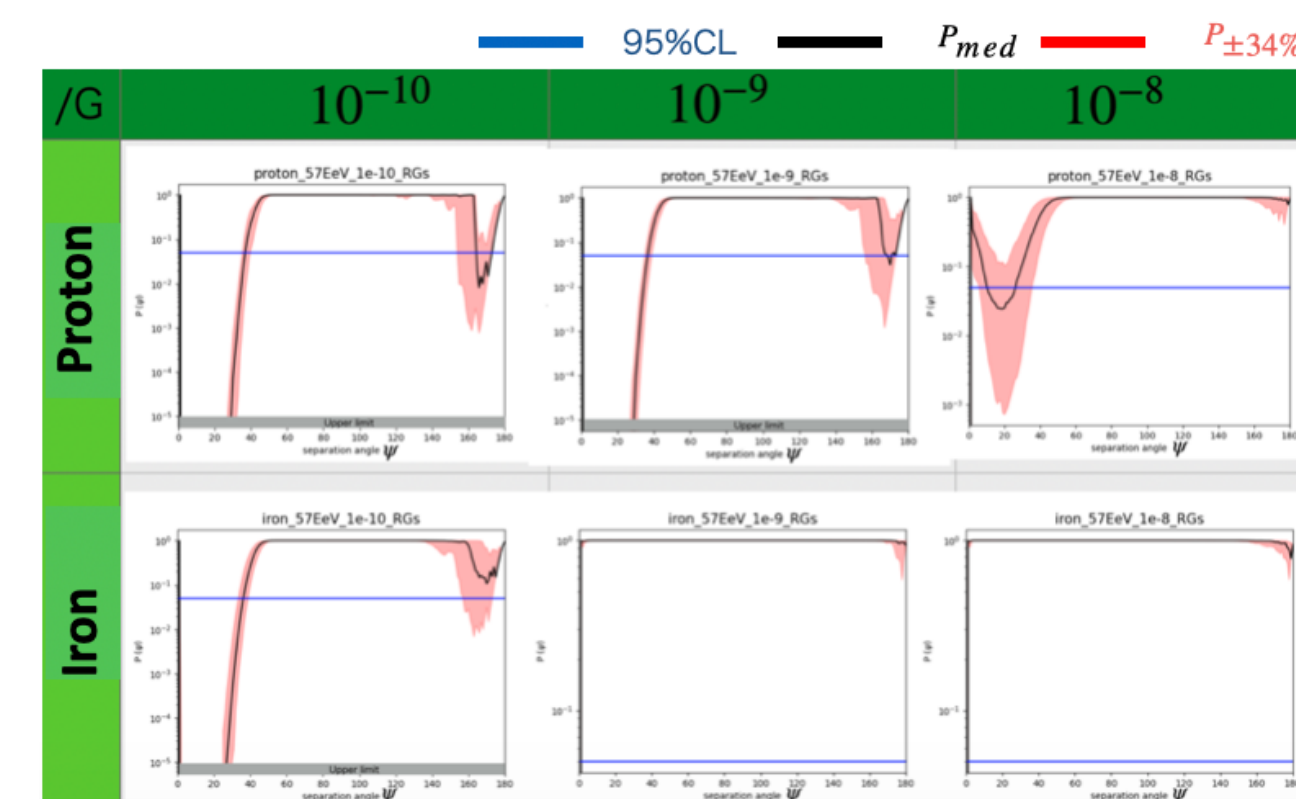


Fig 2 : This result shows the clustering of the expected CRs from the RGs list.