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Nickel Measurements in DAMPE Cosmic Ray Data

Haoran Sun

(on behalf of the DAMPE Collaboration)

University of Science and Technology of China (USTC)

sdshr2017@mail.ustc.edu.cn

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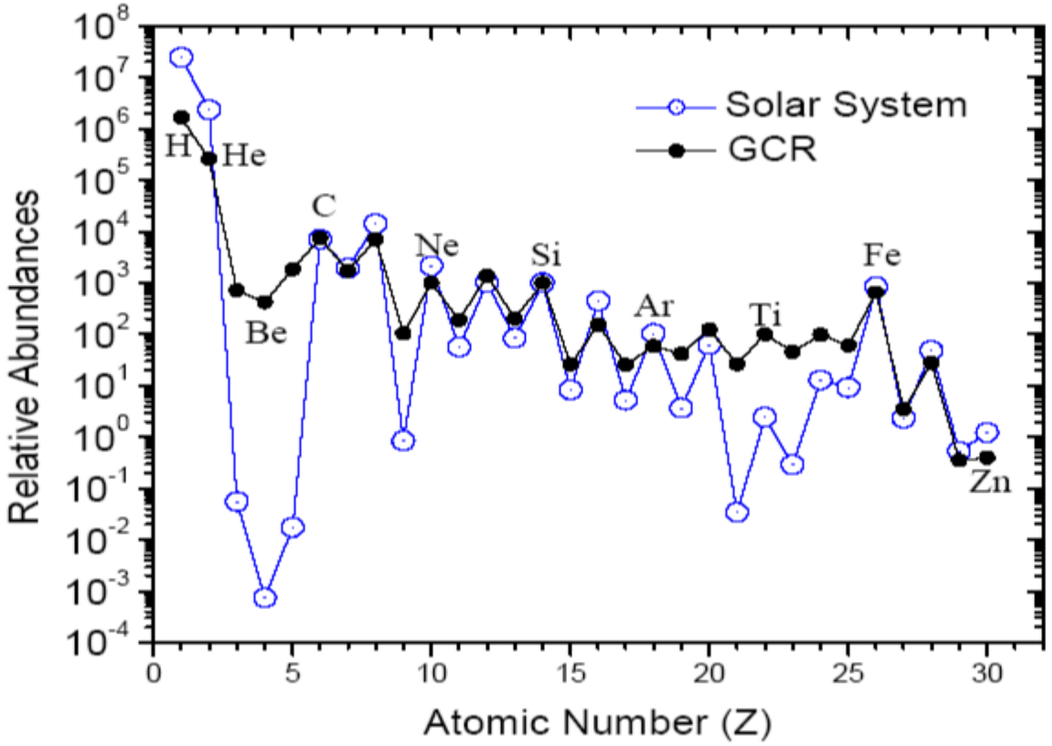
Motivation

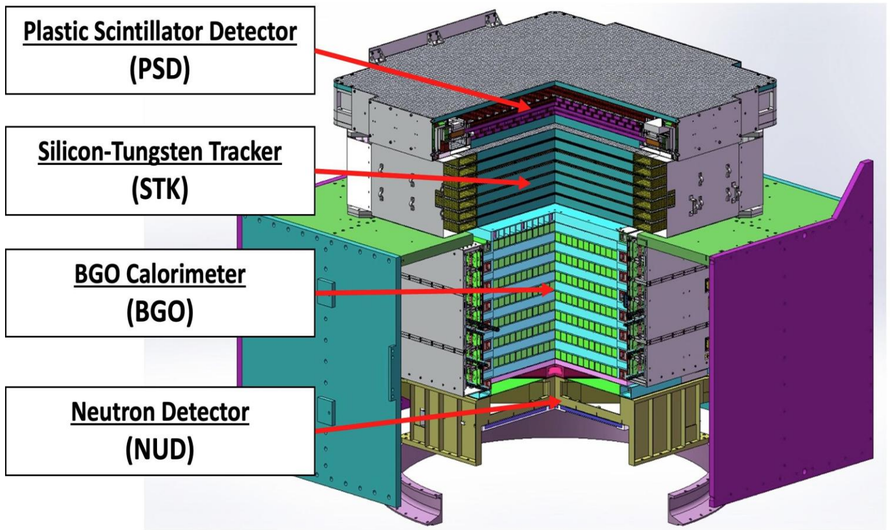
- **The heavy nuclides (H...Fe) in cosmic rays mostly come from nuclear fusion reactions in stars.**

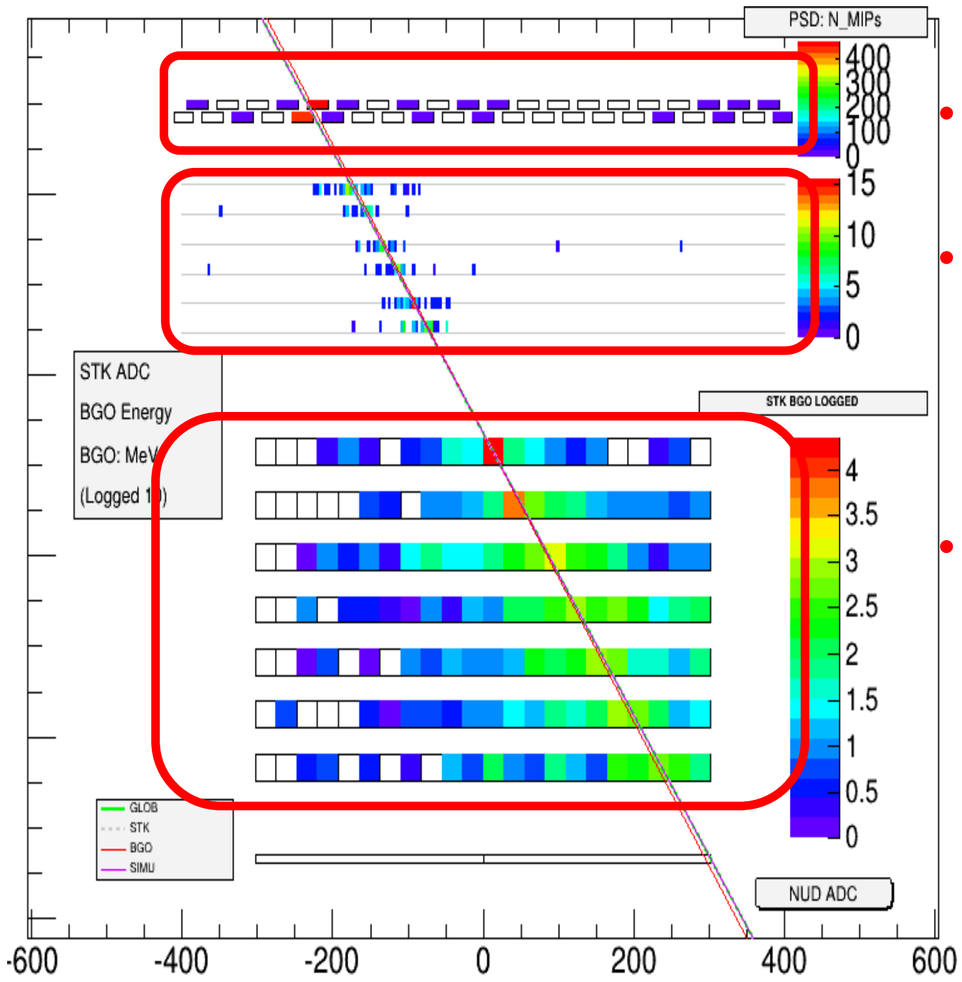
- **Nickel, as the most abundant beyond iron nuclide, enables critical comparative studies of energy spectra with iron.**



H, He…Fe, Ni

Measurement of Nickel Flux





- PSD Charge
- STK Track
- BGO Energy

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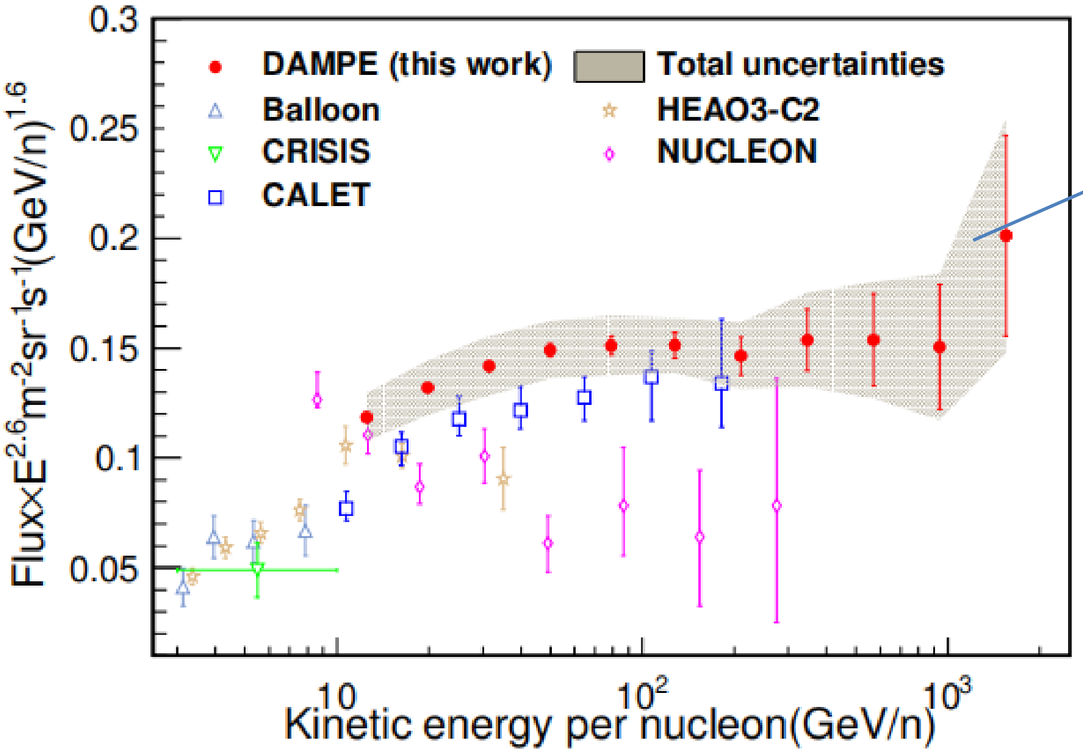
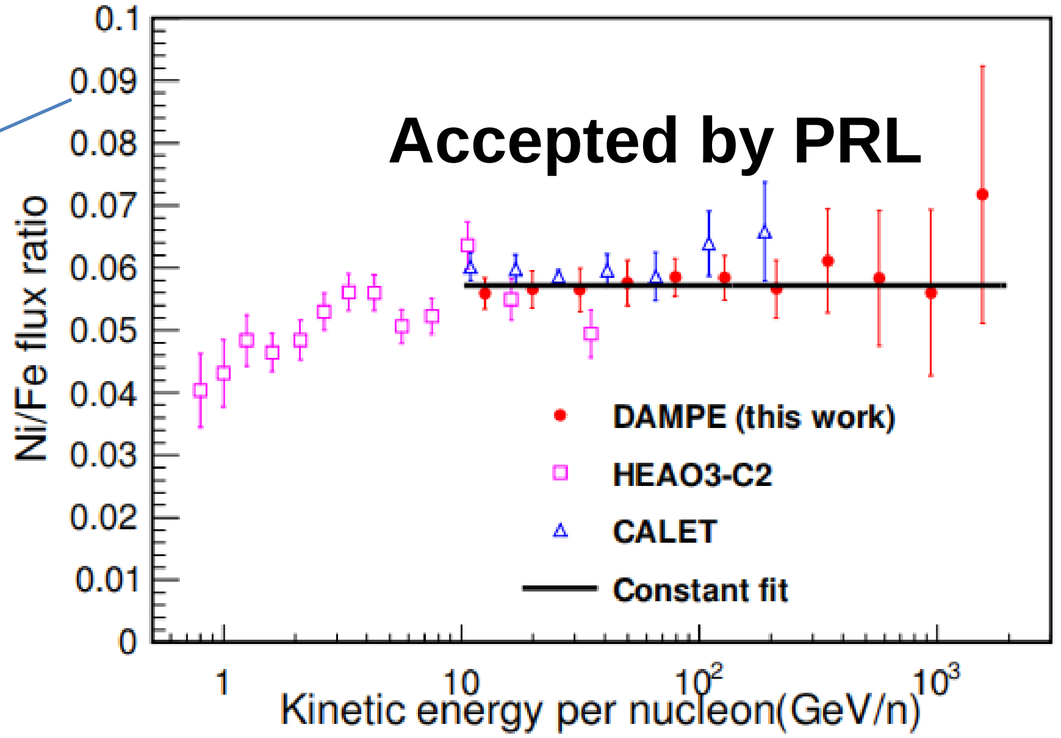
Nickel Flux

- The differential flux of nickel from 10 GeV/n to 2 TeV/n was obtained.
- A single power law is used to fit, with γ = -2.60±0.03
- In the energy region from 10 GeV/n to 2 TeV/n, the nickel to iron ratio can be approximated by a constant fit 0.057.





Thank you!