

Open Issues and Future Prospects
L'Aquila: UHECR2022

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Open questions that must be resolved

- **Why are the measurements of the flux of particles by the Auger and TA collaborations from the part of the sky seen by both groups in disagreement?**
- **The issues of the elongation rate differences need to be resolved**

Mass inferences are model dependent – but same model should give same results

Until these issues are understood, there seems little point in discussing N-S differences

- and surely impedes possibilities of starting new projects

Questions to consider when planning for future giant ground arrays

- **Should target be to be ready to go post-POEMMA?**
- **How accurately need one measure the energy spectrum?**

Results from Auger Observatory are dominated by systematic uncertainties below ~ 30 EeV

- **What can one say about mass on an event-by-event basis?**
- **Would be useful to link with one of the neutrino projects at least at one site.**
Detecting UHE neutrinos is an important goal
- **Novel technologies will inspire builders**

Phenomenologists **must** help

- They have recently been given good data to work with - and have advanced some interesting ideas *post-hoc*

BUT, please make some predictions to that the experimentalists know what to build

Will help enormously

- compare Burbidge/Ginzburg debate and prediction as to how it might be settled with gamma-ray satellites