
Contribution ID: **54** Type: **poster**

# Disentangling the Air Shower Components Using Scintillator and Water Cherenkov Detectors.

The current challenge in studying ultra-high energy cosmic rays is inferring the primary mass-composition. In order to get a better handle on mass-composition it is vital that we disentangle the contributions from the different components of the air shower, as this relates to the primary mass as well as possible systematic uncertainties arising from the use of Monte Carlo hadronic interaction generators. We therefore consider a ground array of scintillator and water Cherenkov detectors. The different response characteristics of these two types of detectors to the components of the air shower could provide a way to infer their relative contributions. We use a detailed simulation in order to estimate the impact of parameters, such as scintillator detector size, in the determination of the size of the muon component.

**Author:** GONZALEZ, Javier G. (KIT)

**Co-authors:** Dr ROTH, Markus (KIT); Dr ENGEL, Ralph (Forschungszentrum Karlsruhe)

**Presenter:** GONZALEZ, Javier G. (KIT)