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Cosmic ray effects due to meteor shower using high altitude balloon experiment

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In past many studies are done on cosmic ray which are said to be messengers of universe but no one yet think to study the effects when there is a meteor showers. It opens a new window to study more about the universe or allows us to see the universe in a different way. Most of stratosphere conditions can be created in laboratories like Temperature, Pressure, humidity and even some radiations can be generated. The reason why one should opt for HAB for this experiment is cosmic rays cannot be generated and they are highly detected in high altitude in primary form rather than decayed form(secondary form) in ground observatories. Meteor shower is visible through naked eye but the effect on cosmic ray will be seen high altitude compared to ground. Detection of Cosmic ray- Particle detector can be used for detecting cosmic rays which consists of Scintillator and photomultipliers tube or sensor. Scintillator has a property scintillation- when a charged particle enters the detector, it absorbs that energy and leads to emission of light. photo tube or photomultiplier is used to multiply the light and allows us to see in digital detector. **Studying the most possible effected region-** Meteor showers takes place at 100 km from ground where as our balloon can reach up to the 35km, The effect may not be in 35km or less in that region of detection. we can use camera to collect the photons and can be given to cosmic detector. Main difficult is camera most be focused on meteor showers. Using GPS module, we can know the current longitude and latitude and we already know the exact location meteor shower is expected to be visible(Northern Hemisphere). We used a track algorithm to track the meteor shower based on altitude and direction with which our latex balloon is moving. No need for servo motor because we will be taking rotational camera. Building the payload for studying meteor shower effect on cosmic ray using high altitude balloon with improvised detection is selected to be launched on 12-13 August 2021 in TIRF Hyderabad.

Preferred track

Cosmic Rays and Astrophysics

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