

Workshop on a wide field-of-view Southern Hemisphere TeV gamma ray observatory

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A muon detector using silicon based photo sensors (SiPMs)

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The Pierre Auger observatory currently undergoes a major upgrade (AugerPrime) installing scintillator detectors on top of each tank. With the complement information of the scintillator detector and the water-Cherenkov detector, the muonic component and the electromagnetic component of air-showers can be disentangled. The obvious disadvantage is that both detectors see both components although at different mixture. To resolve this, a scintillator detector has been developed which can be buried under the water tanks using the water as a shielding for the electromagnetic component such that the scintillator detector will only measure the muonic component. In this way, the muonic component can be measure with less bias and both signals can be disentangled more easily. A similar low-cost system could be utilized under a HAWC type array as a veto for hadron induced air-showers showers.

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