

The purpose of our research was to limit the solid angle such that all muons had to enter the 4 detectors nearly horizontally or vertically, depending on the detector's orientation. We then observed the correlation between the solid angle, the distance between each individual paddle, and the incoming flux. The solid angle is defined as "the area of the segment of a sphere, centered at the angle's vertex, that the object covers." Therefore, separating the detector paddles would limit the solid angle that the incoming muons would compose. We expected there to be a direct correlation between the solid angle and the incoming flux, which turned out to be a correct prediction according to our data. We also expected that fewer muons would enter horizontally (which turned out to be the case), as we assume they would have to travel through a greater distance of atmosphere than muons that entered vertically. A continuation of this experiment could include a shifting of the orientation to many different angles. Eventually, one could even attempt to map out some form of a model showing the concentrations of incoming muons by combining the data at the different orientations.