

## ABSTRACT

Dark Energy Survey via the technique of Counts of Galaxy Clusters, Salem Cherenet (University of Illinois at Urbana-Champaign, Urbana, IL 61801), Juan Estrada, and Jiangang Hao (Fermi National Laboratory, Batavia, IL 60510).

Recently it was discovered that the universe is expanding at an accelerated rate. This acceleration can be explained with the concept of Dark Energy. Dark Energy Survey is an imaging survey to make precise measurement of dark energy. The first part of this paper describes in detail the simulation done to estimate the equation of state parameter,  $w$  of the dark energy and its error by comparing it with a simulation bias data. All of the calculations were done using a mathematica based tool created specifically for this project. Comparing the model bias with the simulation bias data given  $\sigma_D = 0.03$  gave  $w = -0.716488 \pm 0.098$ . The second part of this paper focuses on the method used to build a GUI that is used to analyze images from CCD. The GUI is mostly stable with some bugs still to be fixed.