## Study of Forward and Backward Fragmentation Processes in $\Lambda^0$ Leptoproduction

Sereres C. Johnston<sup>1</sup> and Lamiaa El Fassi<sup>2</sup> <sup>1</sup>Argonne National Laboratory <sup>2</sup>Mississippi State University

## On behalf of the CLAS Collaboration

June 27, 2018

## Abstract

Fracture functions are akin to fragmentation functions but describe hadron production in the target remnant rather than current fragmentation region, factorizing and evolving in a predictable way. Like structure functions, fracture functions extracted from an experiment in one kinematic regime can be used to compute reactions at different scales. Recent theoretical predictions have acknowledged the leptoproduction of  $\Lambda^0$  hyperon as the best probe to study the fracture functions in semi-inclusive deep-inelastic scattering.  $\Lambda^0$  production off deuterium in datasets which can be finely binned in variables such as  $Q^2$ ,  $x_B$  and  $\nu$  provide valuable experimental input for the first extraction of fracture functions using electron triggered processes. This talk will describe the ongoing  $\Lambda^0$  analysis from 6 GeV CLAS EG2 data-sets with a discussion of both forward and backward fragmentation processes.

This work is supported in part by the US DOE contracts # DE-AC02-06CH11357 and DE-FG02-03ER41528.