Contribution ID: **18** Type: **Contributed Talk**

Global analysis of SSAs in SIDIS, Drell-Yan, e+e- annihilation, and proton-proton collisions

Wednesday, March 25, 2020 2:30 PM (20 minutes)

The analysis of single transverse-spin asymmetries (SSAs) gives us tremendous insight into the internal structure of hadrons. For example, the Sivers and Collins effects in semi-inclusive deep-inelastic scattering (SIDIS), Sivers effect in Drell-Yan, and the Collins effect in electron-positron annihilation have been widely investigated over many years in order to perform 3D momentum-space tomography. In addition, observables like A_N in proton-proton collisions are of interest due to their sensitivity to quark-gluon correlations. In this talk I will report on the first global fit of SSA data from SIDIS, Drell-Yan, e^+e^- annihilation into hadron pairs, and proton-proton collisions. I will discuss the results of our analysis, including the extraction of a unique set of universal non-perturbative functions that describe all observed SSAs, and also explore avenues for future research.

Author: PITONYAK, Daniel (Lebanon Valley College)

Co-authors: CAMMAROTA, Justin (The College of William and Mary); GAMBERG, Leonard (Penn State); Prof. KANG, Zhongbo (University of California Los Angeles); MILLER, Joshua (Lebanon Valley College); PROKUDIN, Alexei (Penn State Berks); SATO, nobuo (Jefferson Lab)

Presenter: PITONYAK, Daniel (Lebanon Valley College)

Session Classification: Spin Physics

Track Classification: Spin Physics