Regions of pion production in Semi-Inclusive Deep Inelastic Scattering[1] ALEXEI PROKUDIN, Penn State Berks and Jefferson Lab, MARIAELENA BOGLIONE, University of Turin, MARKUS DIEFENTHALER, Jefferson Lab, LEONARD GAMBERG, SCOTT DOLAN, Penn State Berks, NOBUO SATO, WALLY MELNITCHOUK, Jefferson Lab, DANIEL PITONYAK, Lebanon Valley College, TED ROGERS, Old Dominion University and Jefferson Lab — We study pion production in Semi-Inclusive Deep Inelastic Scattering (SIDIS) and identify various origins of pion production such as current Transverse Momentum Dependent and collinear regions , target, and soft fragmentation regions. In order to guide our intuition we propose a tool that enables one to assess the probability of a particular experimental bin to belong to one (or more) of those regions. The criterium we call affinity is based on a Monte Carlo generation of underlying kinematics of partons and the assessment of the most probable flow of momenta. The affinity tool is applied to the future SIDIS data from the Electron Ion Collider and Jefferson Lab 12 GeV upgrade.

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