The Unified Model for the High Energy Spin Polarizations; Further Extension to the $\gamma + p \rightarrow$, $\nu_\mu + p \rightarrow \Lambda + X$ Productions

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The spin polarizations of hadrons inclusively produced by the p-p and p-nucleus collisions have been studied by the quark rearrangement collision model. The present model is a phenomenological one based on the relativistic equation of motion and using the quark distribution functions in hadrons. The general success of the model has been demonstrated for the normal and anomalous hadron production collisions. We have then concluded usefulness of the present formulation for studying the dynamics producing spin asymmetry distributions and the statics determining signs and magnitudes of the spin polarization by reflecting the characteristic quark structure in the hadrons and the vacuum.

We now extend the formulation to calculation of the spin polarizations of hyperons produced by photons and leptons-induced collisions on hadrons. It is confirmed that the present model is equally useful to these cases by also accepting the primally quarks production mechanism. We will discuss an essential interaction to produce the spin asymmetry distributions.