Global polarization of Λ hyperon in Au+Au collision at $\sqrt{s_{\rm NN}} = 54.4$ GeV with STAR

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The medium generated by non-central nuclear-nuclear collision would have a large angular momentum, also known as vorticity of the Quark Gluon Plasma (QGP). Due to the spin-orbit coupling, spin directions of particles formed by recombining quarks from the plasma could reflect the spin direction aligned with the angular momentum of the system. Global polarization is expected to lead to the understanding of the physical properties of QGP, because it is caused by the vorticity of the system. Global polarization has been measured from 7.7 GeV to 200 GeV via Λ hyperon decay. In this talk, various differential studies including p_T, rapidity, centrality and event planes dependences of the global polarization measurements using the recent high statistics dataset from 54.4 GeV Au+Au collisions will be reported.