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First Observation of W Boson Production at the PHENIX Detector KEN'ICHI KARATSU, Kyoto University / RIKEN, PHENIX COLLABORATION — The collisions of polarized protons at the Relativistic Heavy-Ion Collider (RHIC) provide us very good opportunities to study proton spin structure. One of the main goals of the RHIC spin program is to measure the polarization of sea quarks using W boson production. The uncertainty of sea quark polarization still remains large, though the polarizations of valence quarks have been determined well by DIS and Semi-Inclusive DIS. Asymmetry of W boson production is a clean way to measure the sea quark polarization due to the V-A coupling of W bosons to quarks, which means the chirarity of interacting quarks are almost fixed. The flavor identification of sea quarks is also possible by separate measurement of W+/W- production. PHENIX is a detector located at one of the collision points of RHIC, and observes W bosons through the decay to leptons at mid-rapidity (|eta| <0.35) and forward rapidity (1.2< |eta| <2.4). The first sqrt(s) = 500GeV run at RHIC was held in early 2009 (RHIC Run9), and the first attempt to measure W bosons was performed at PHENIX. In this talk, the current status of the measurement of W bosons at PHENIX mid-rapidity region will be presented.

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