Search for pair production of third generation leptoquarks in the $\tau\tau b\bar{b}$ final state with the D0 detector

YUAN HU, State University of New York, Stony Brook, D0 COLLABORATION — We report the search for the third generation leptoquarks in $p\bar{p}$ collisions at a center-of-mass energy of $\sqrt{s} = 1.96$ TeV using data with an integrated luminosity of 982 pb$^{-1}$ collected by the D0 detector at Run II of the Fermilab Tevatron. Leptoquarks are assumed to be pair produced and each decays into a $\tau$ lepton and a $b$ quark with a branching ratio $\beta = 100\%$. The signature is a di-$\tau$ plus di-b-jet final state where one $\tau$ is required to decay into a $\mu$ and the other $\tau$ decays hadronically. No evidence for third generation leptoquarks production is observed, and limits are set on $\sigma(p\bar{p} \rightarrow \text{LQ3LQ3} \rightarrow \tau^+ b\tau^- \bar{b})$.