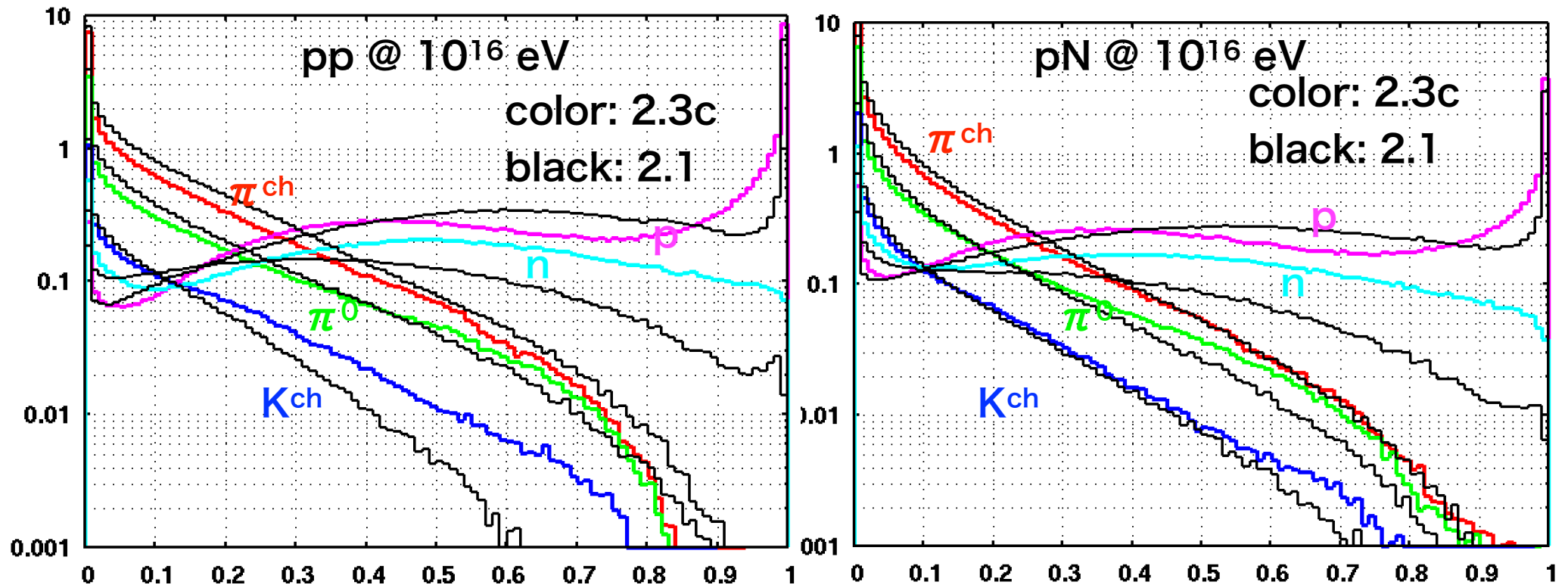
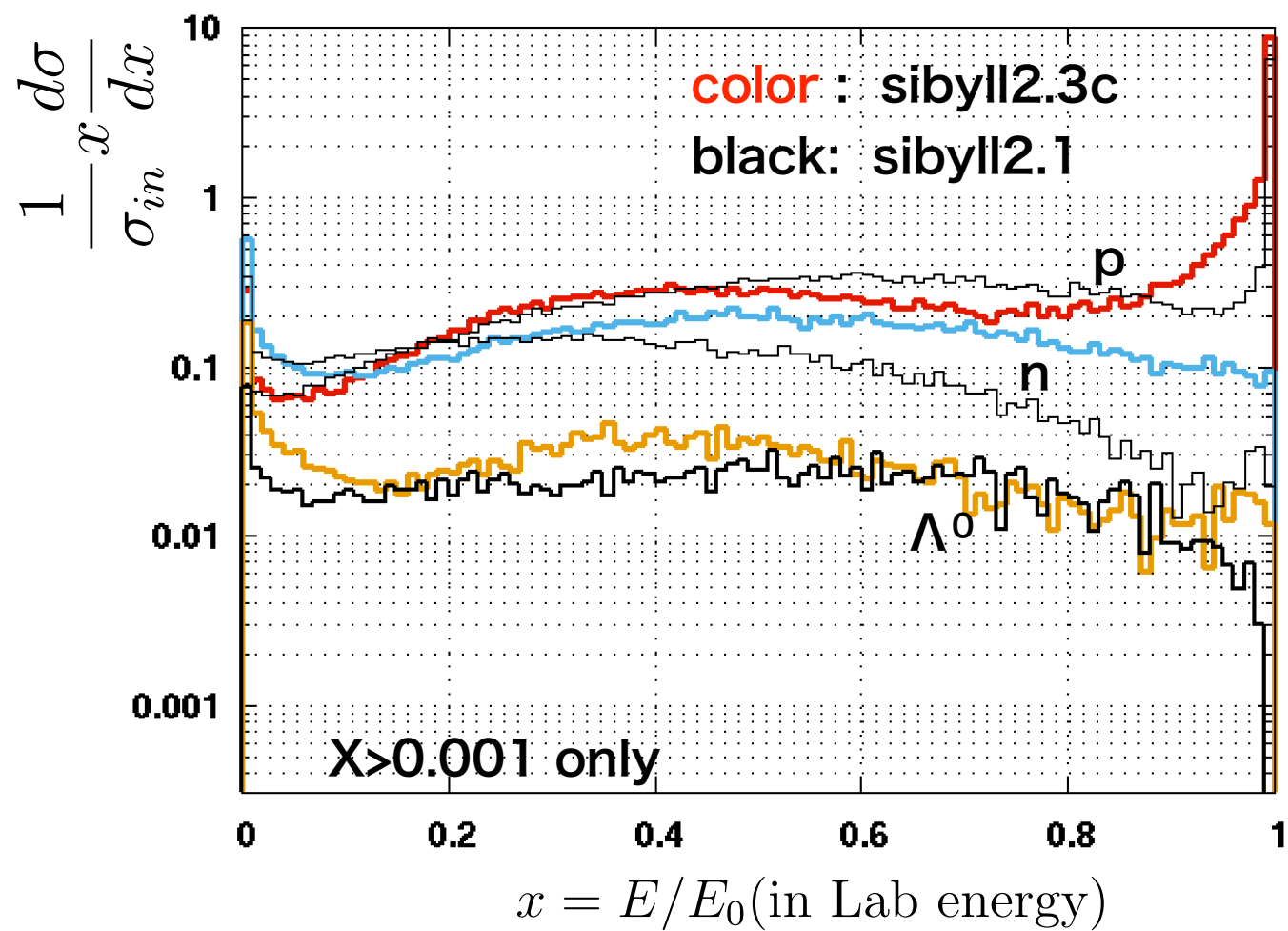
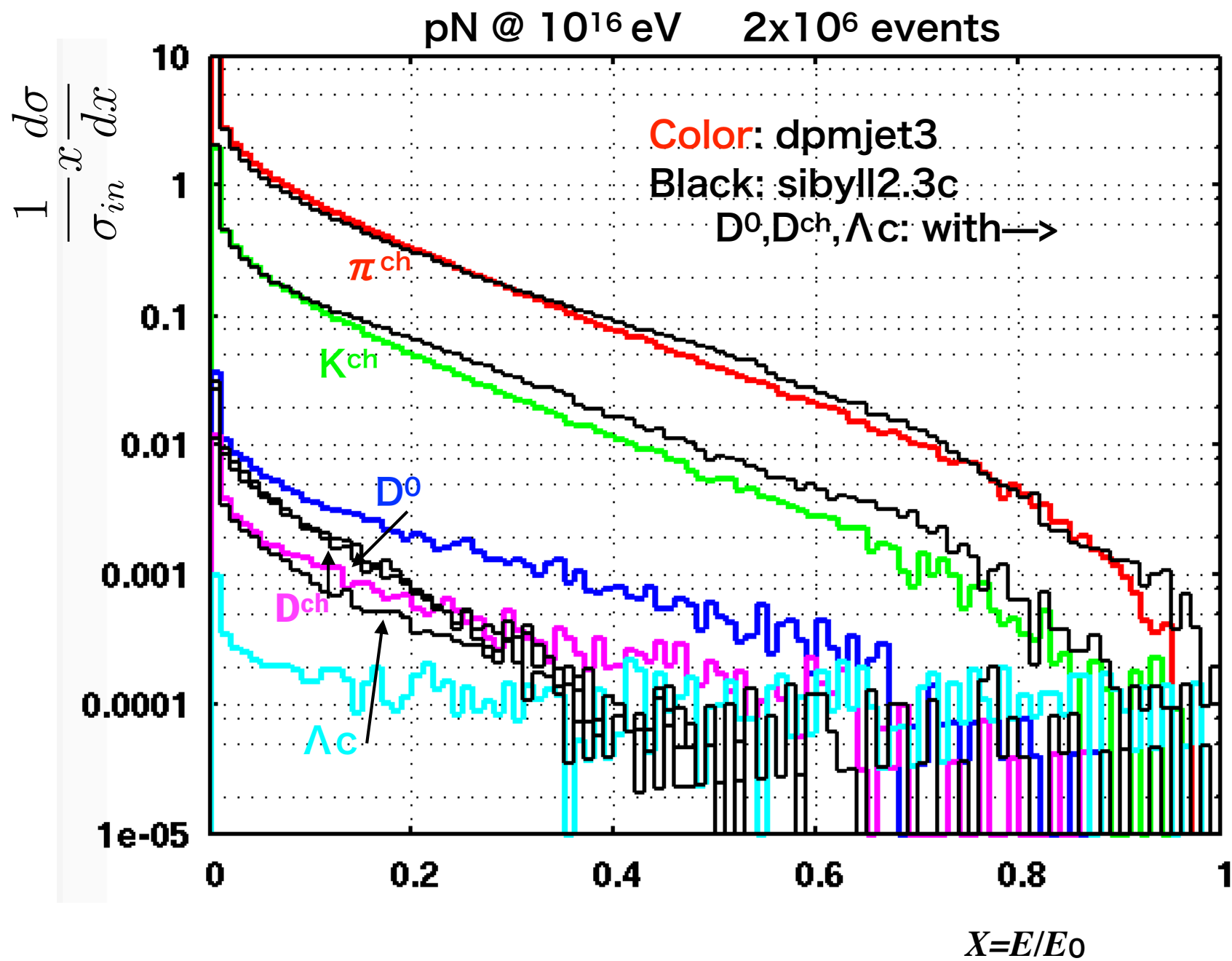


Sibyll2.3c vs Sibyll2.1



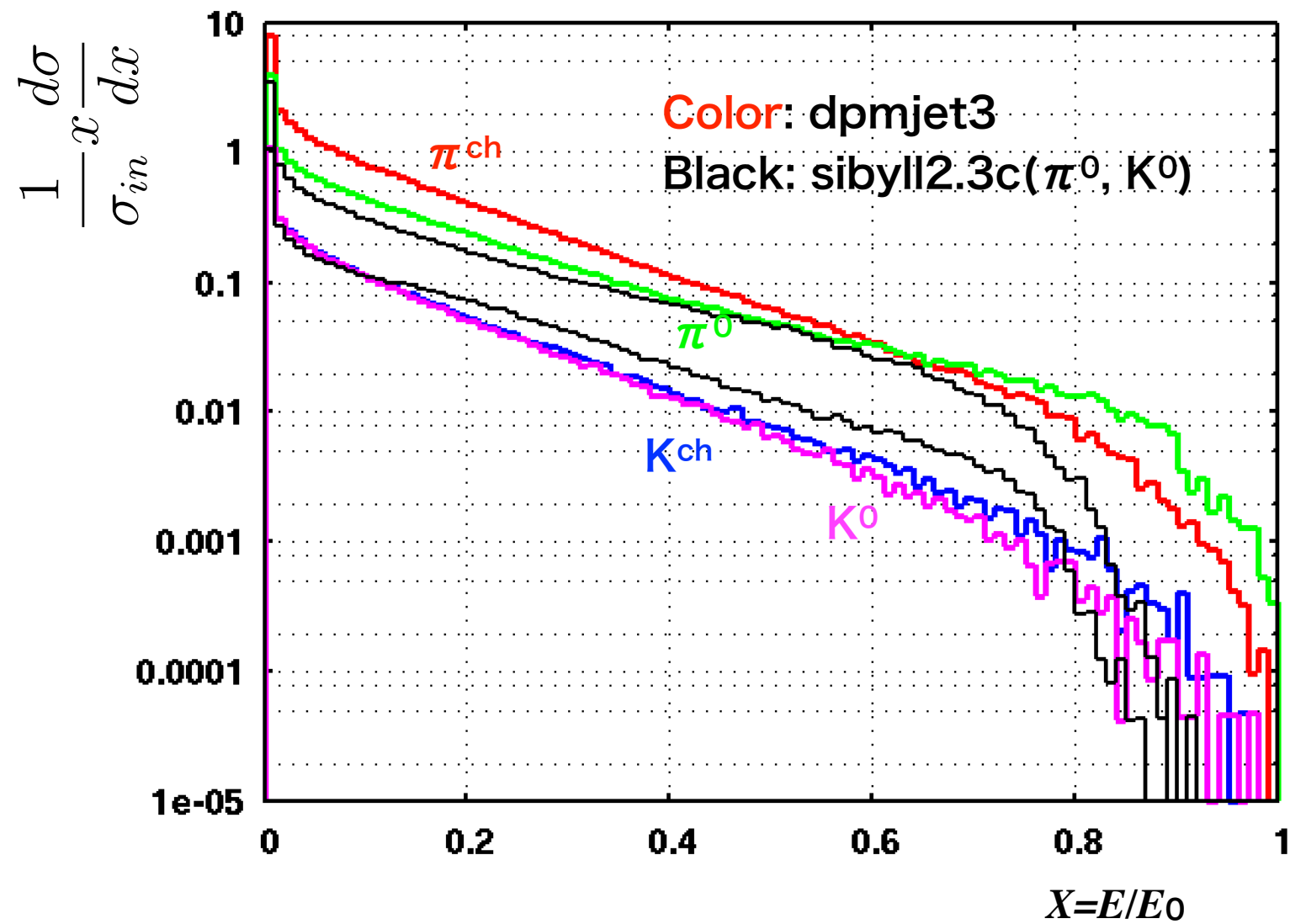
Sibyll2.1 vs Sibyll2.3c
pp collision at 10^{16} eV





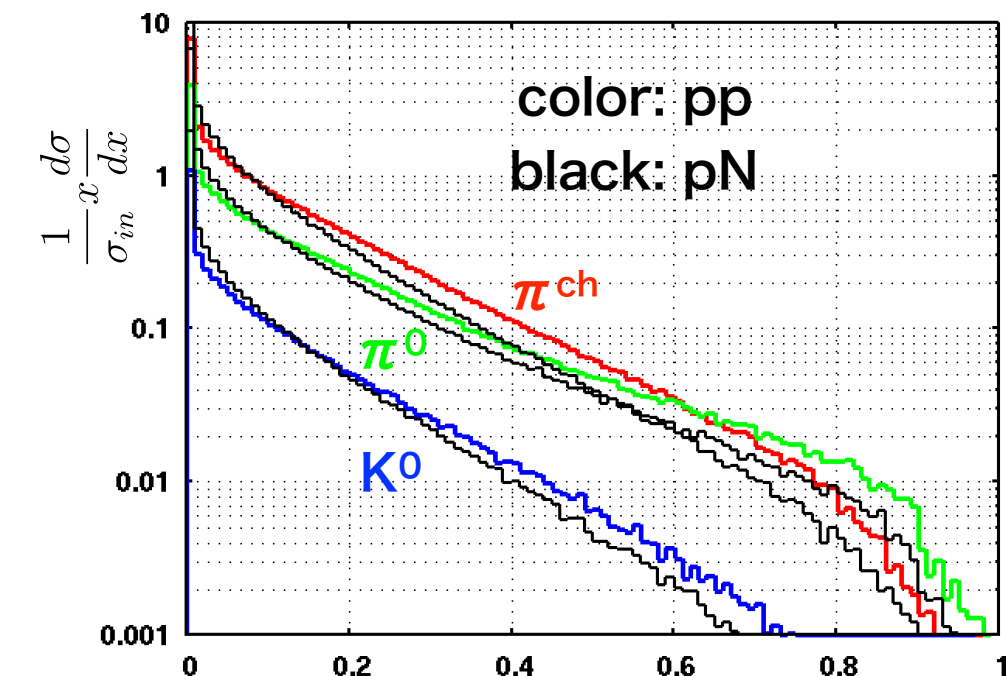
2.3c is consistent with those at ICRR

pp @ 10^{16} eV 2×10^6 events

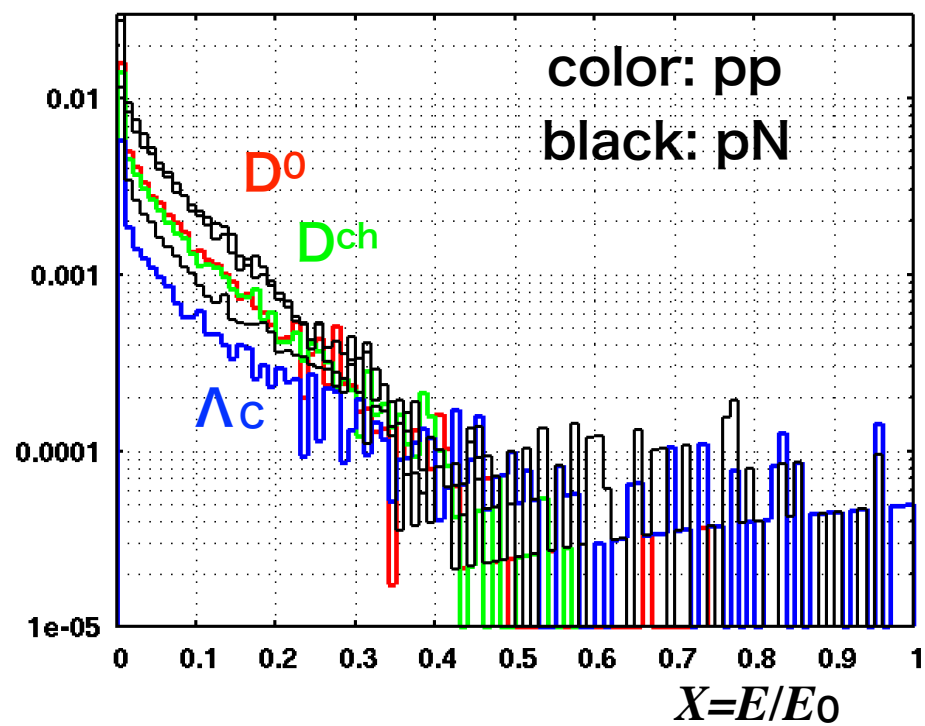
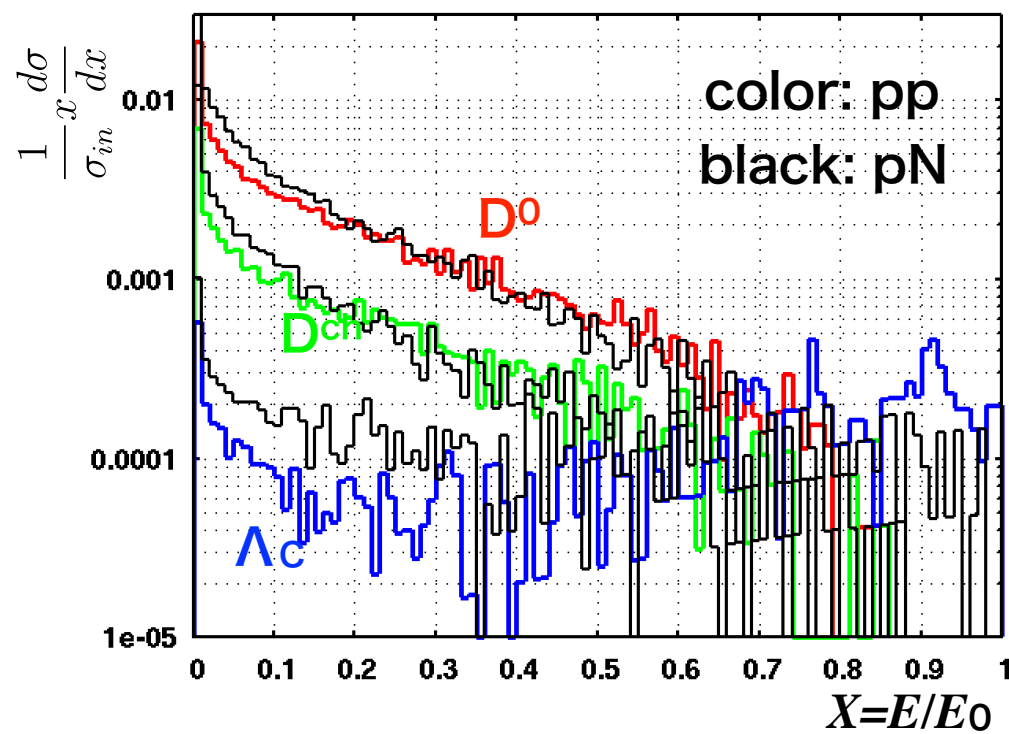
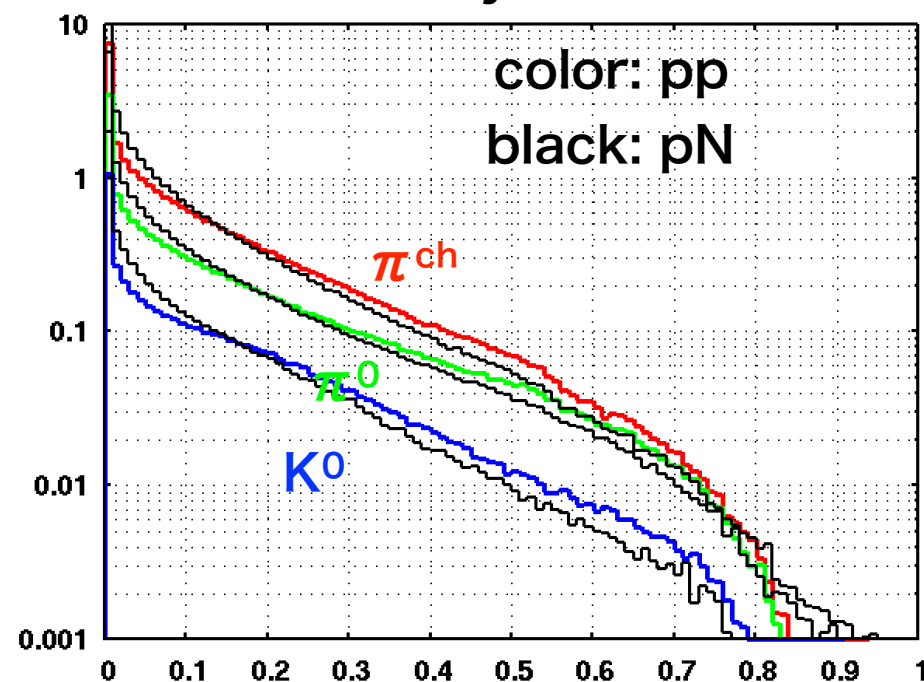


pN vs pp @10¹⁶e V

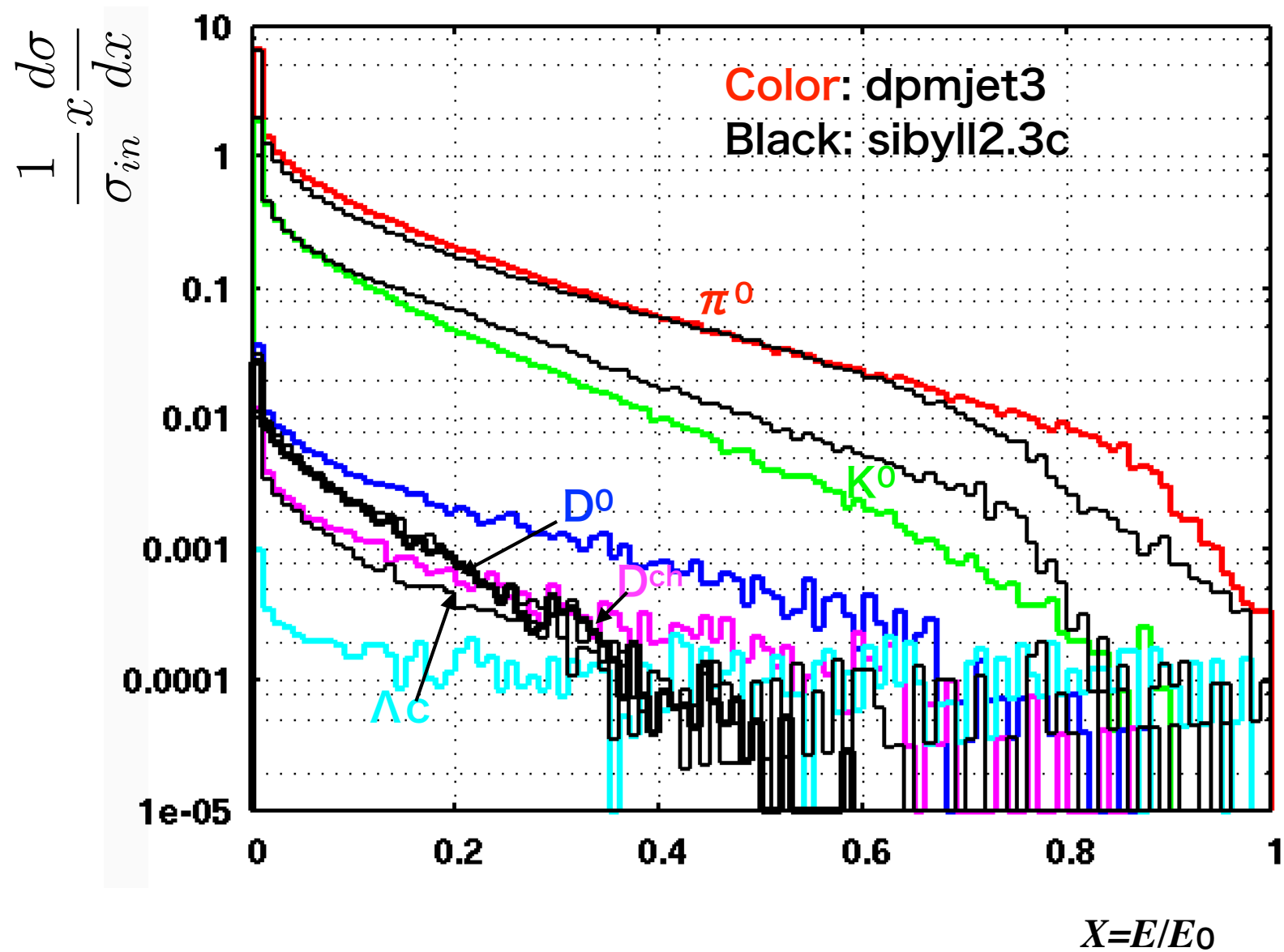
dpmjet3



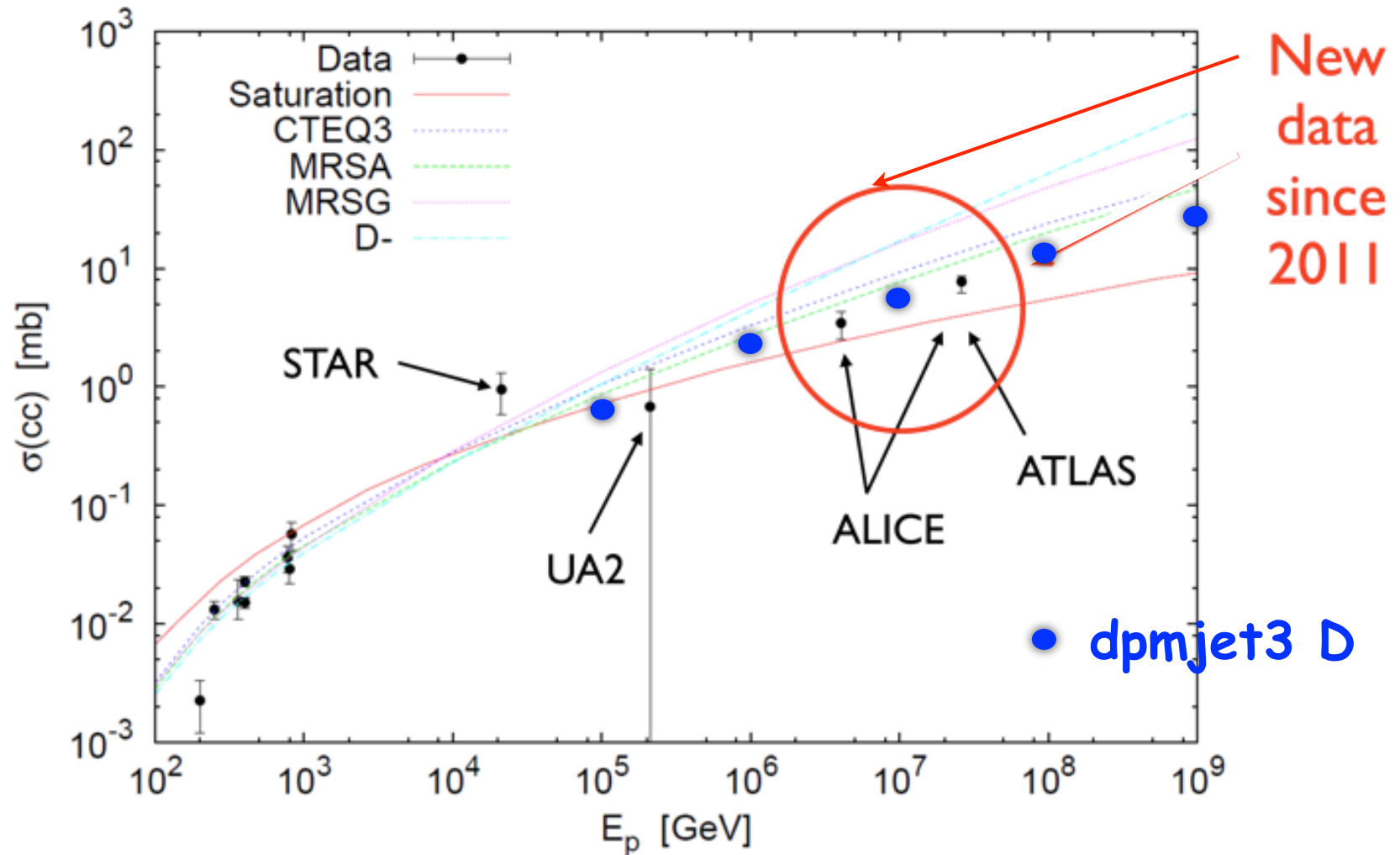
sibyll2.3c



pN @ 10^{16} eV 2×10^6 events



Total charm cross section $pp \rightarrow cc$



Very different energy dependence of calculations!