Hadrons in the forward region

Basic kinematics and PID considerations

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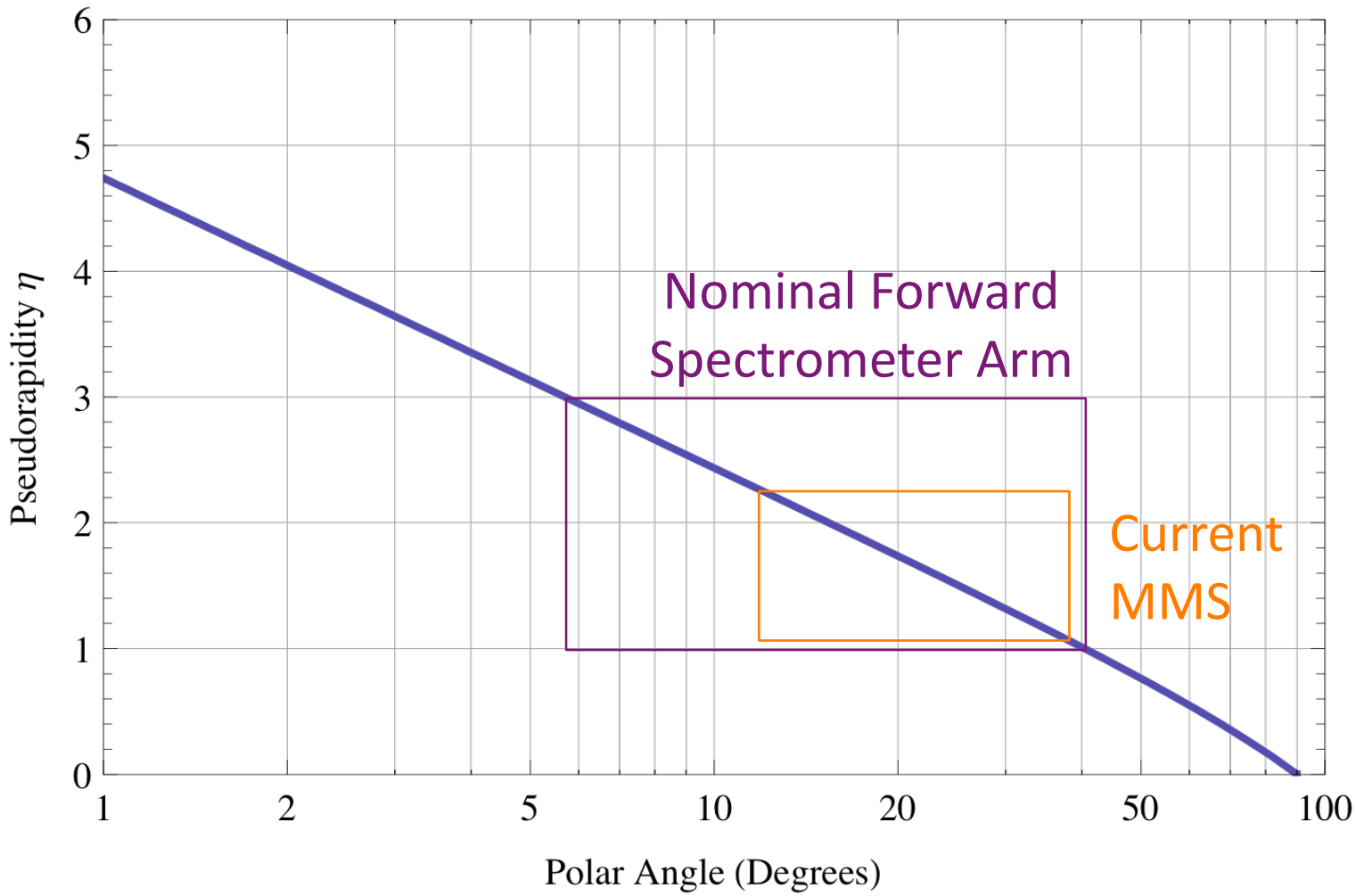
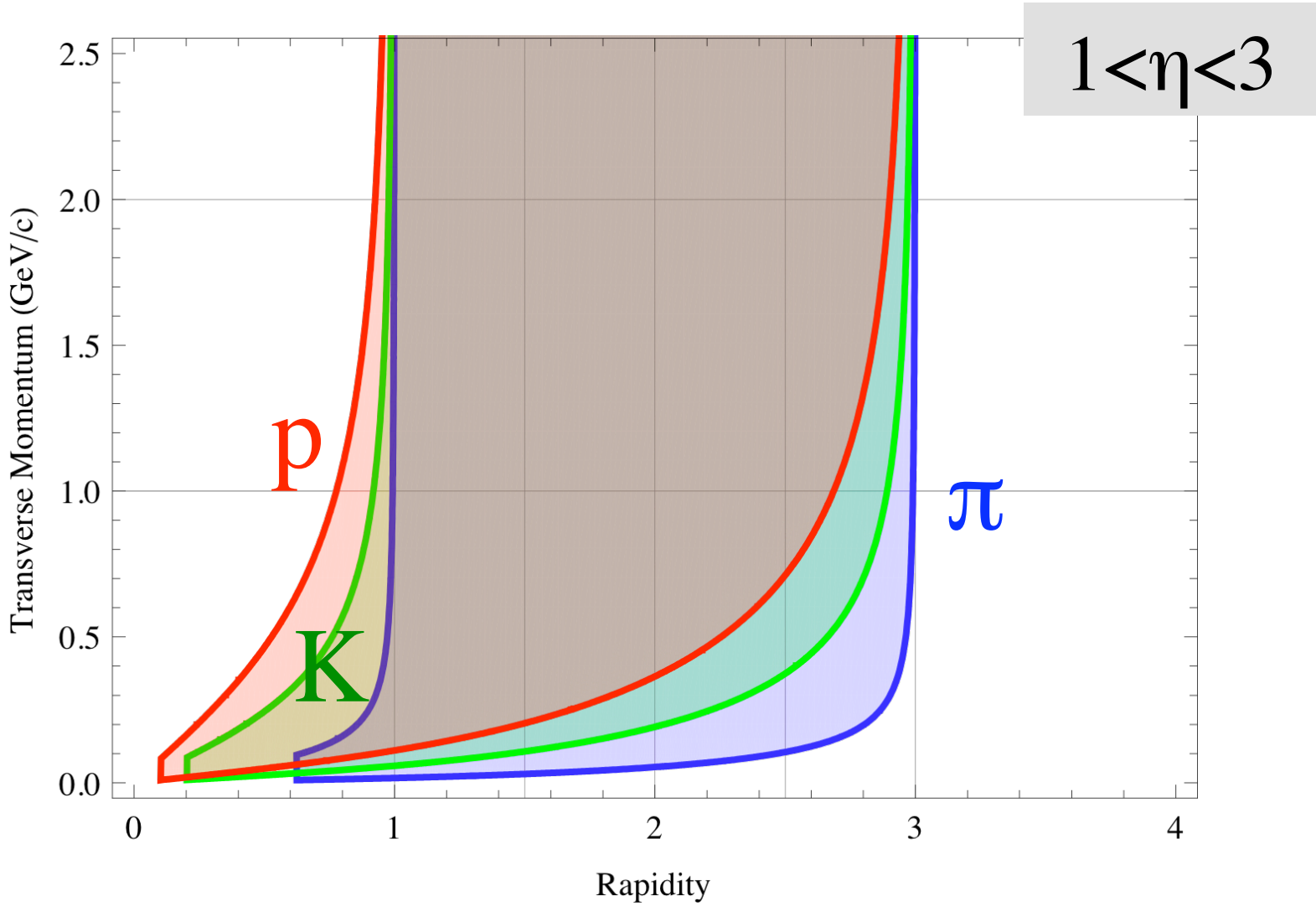
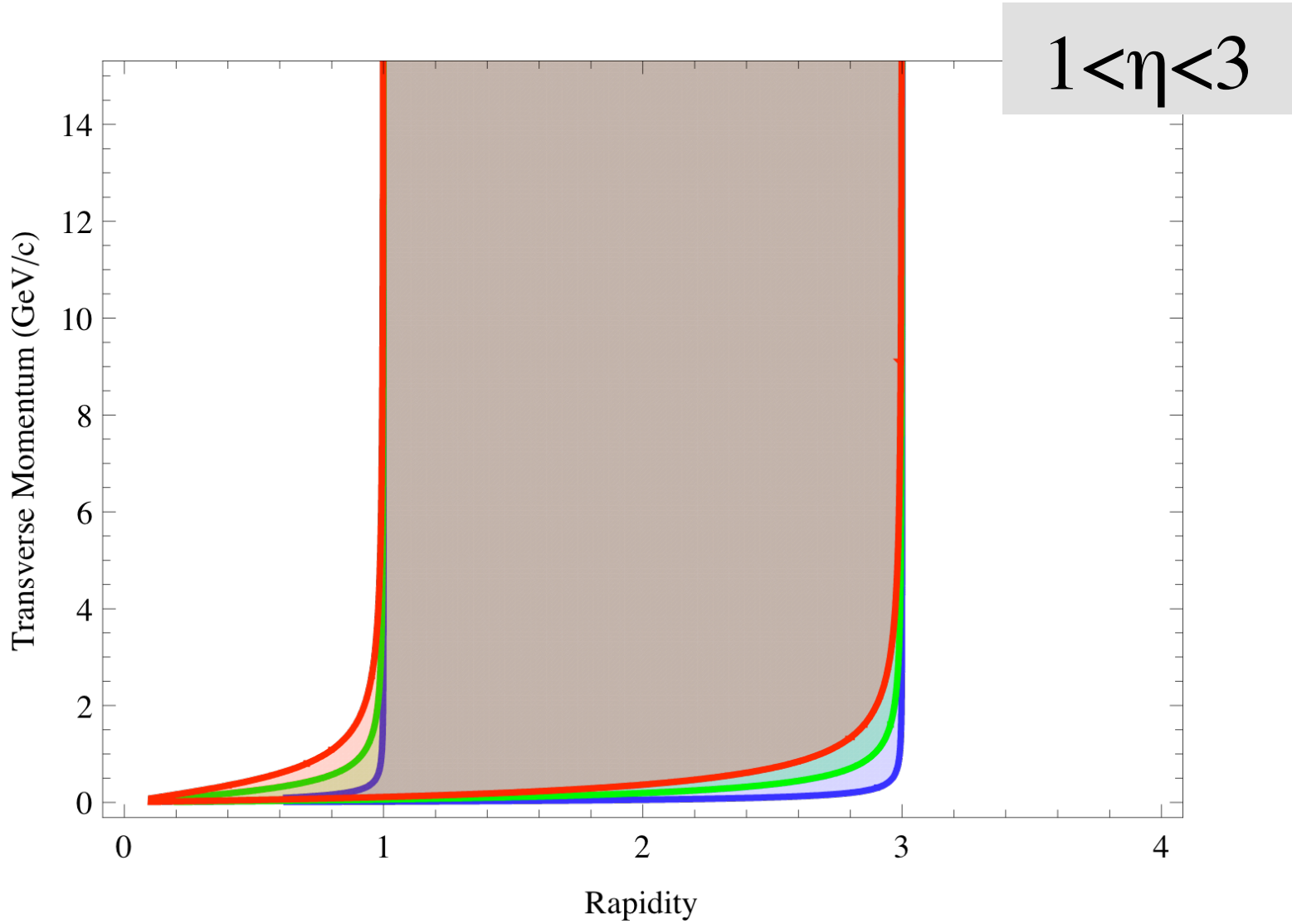
Forward angles



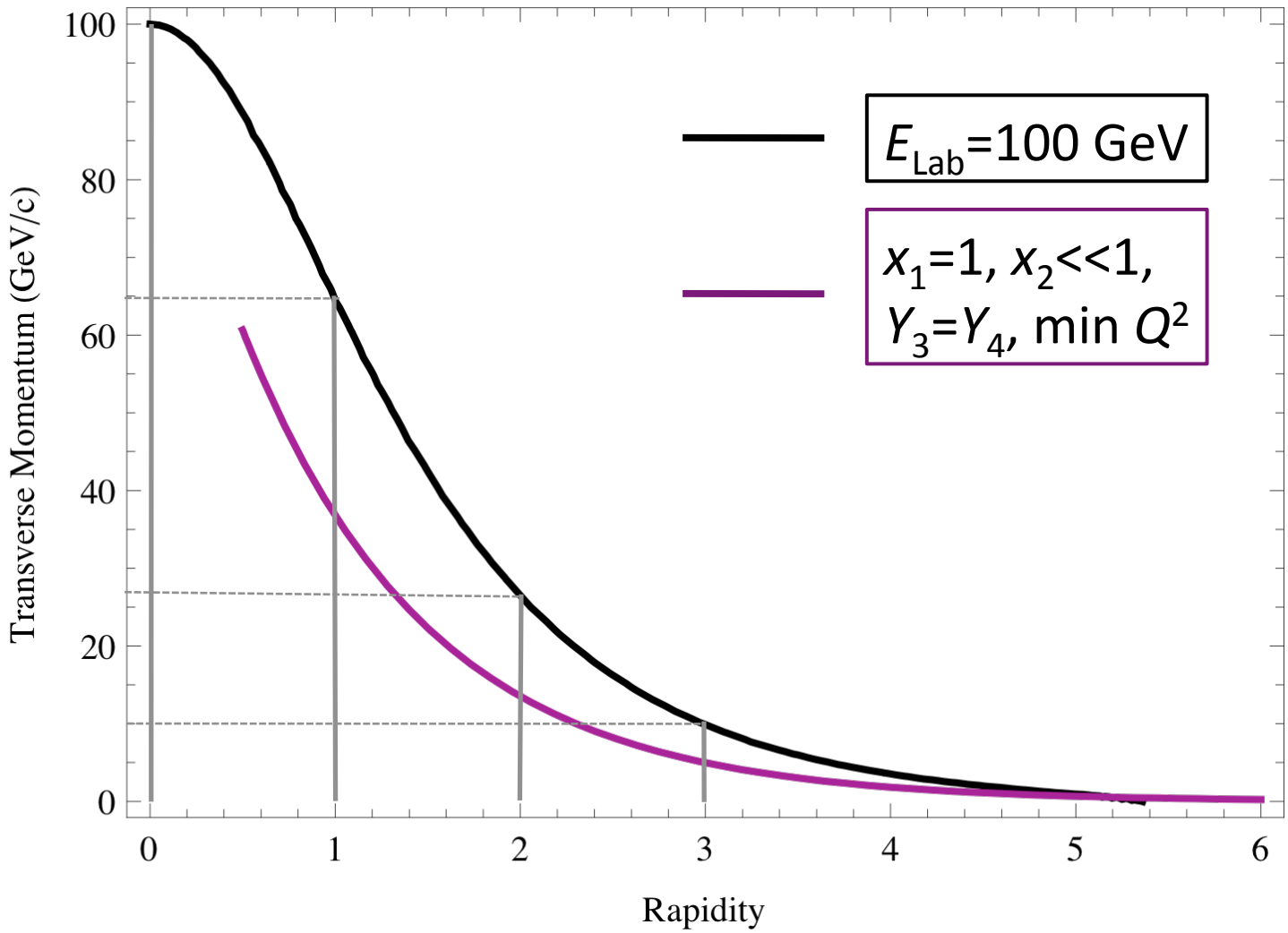
Rapidity and p_T<2.5 GeV/c, hydro range



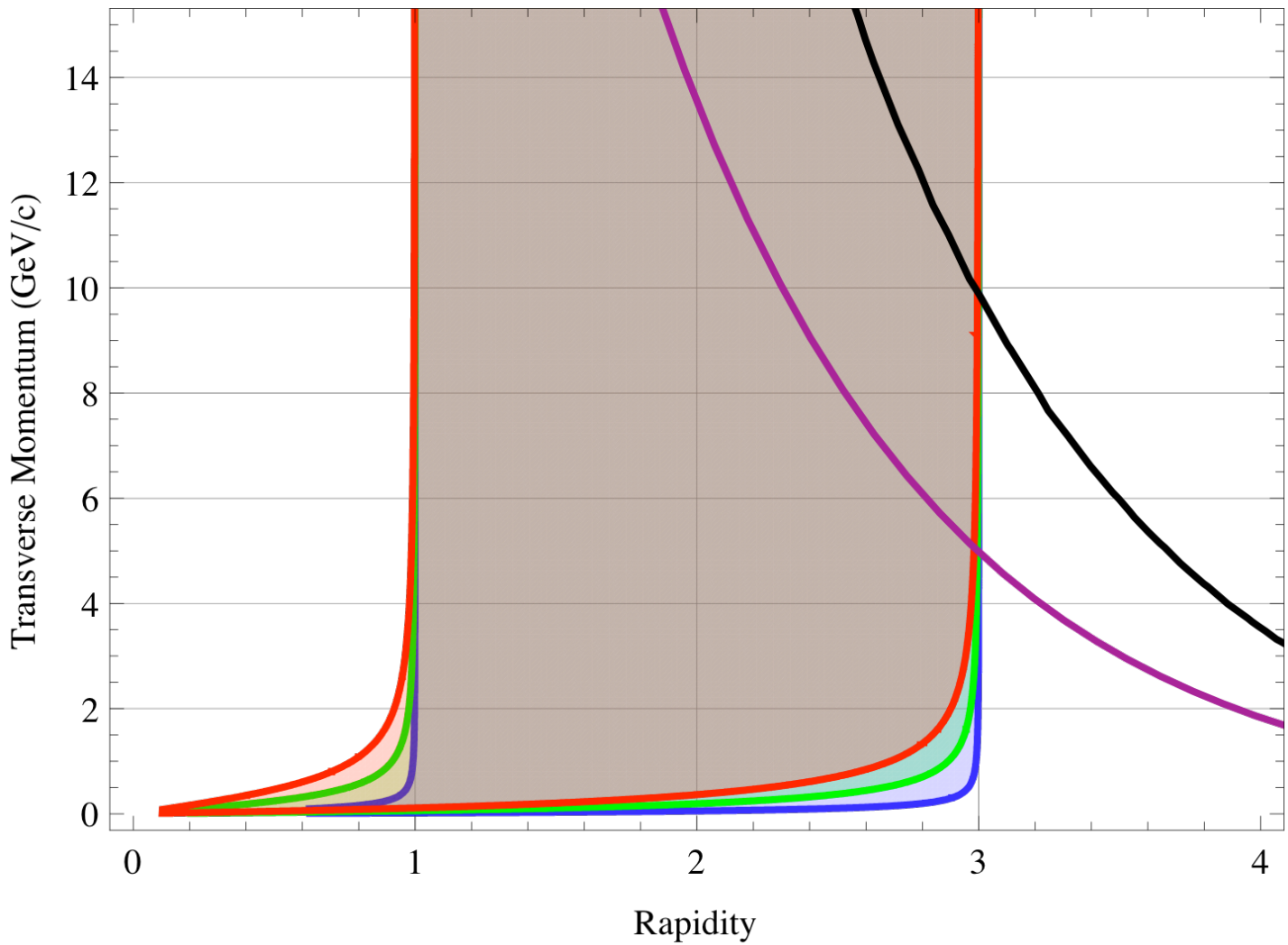
Y and p_T<15 GeV/c, jet/quenching range



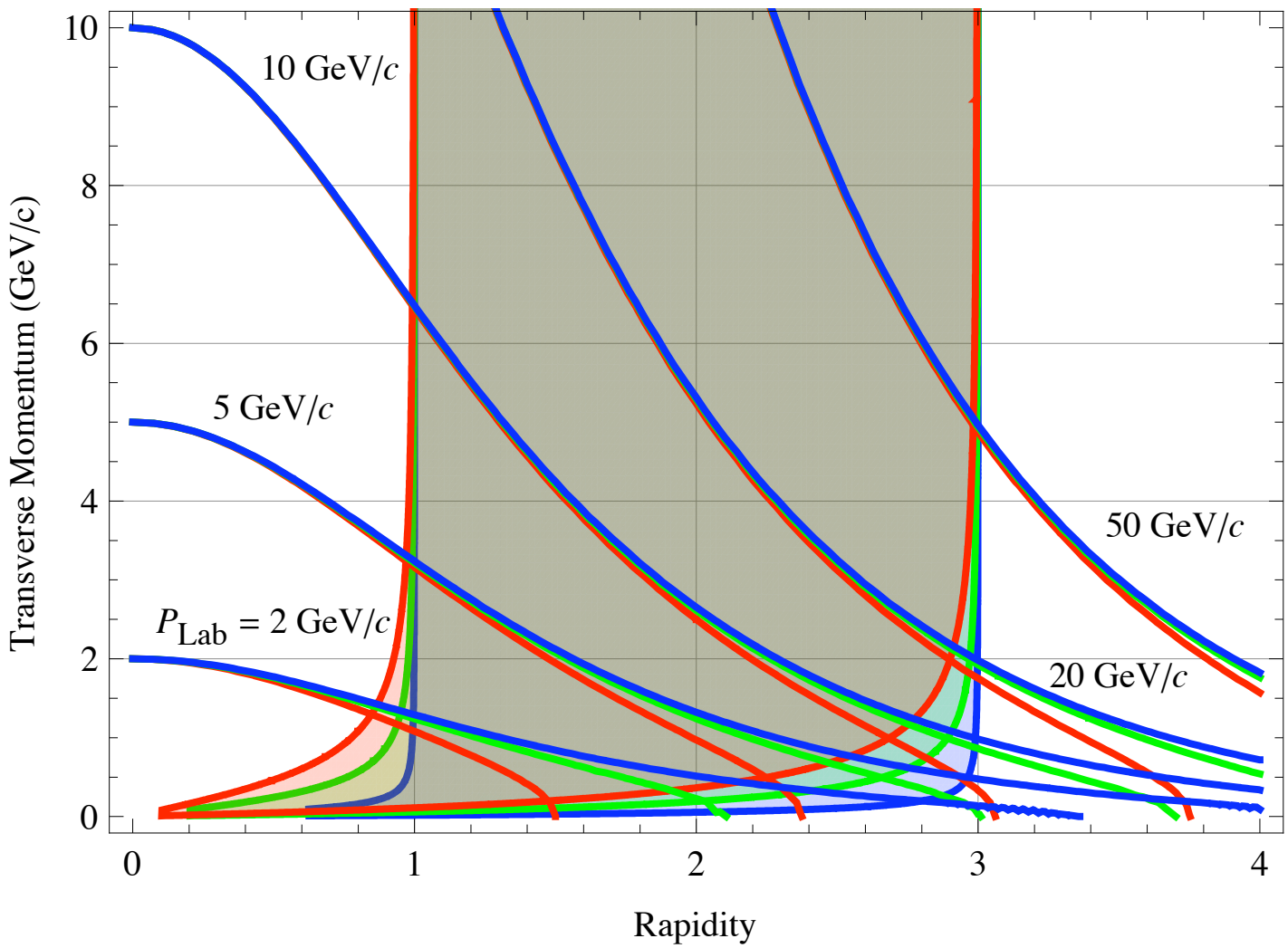
Kinematic Limits



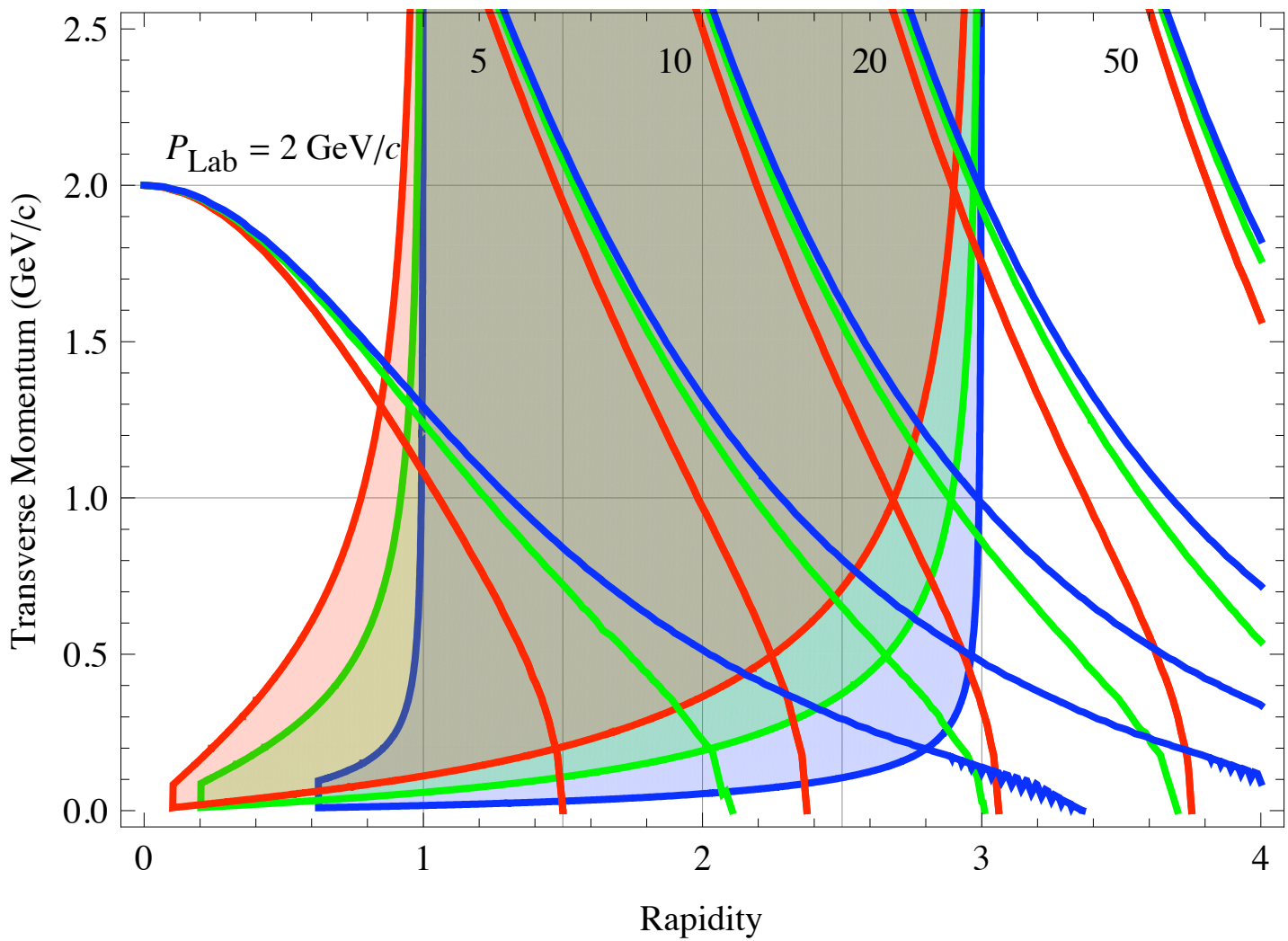
p_T range compressed at high Y



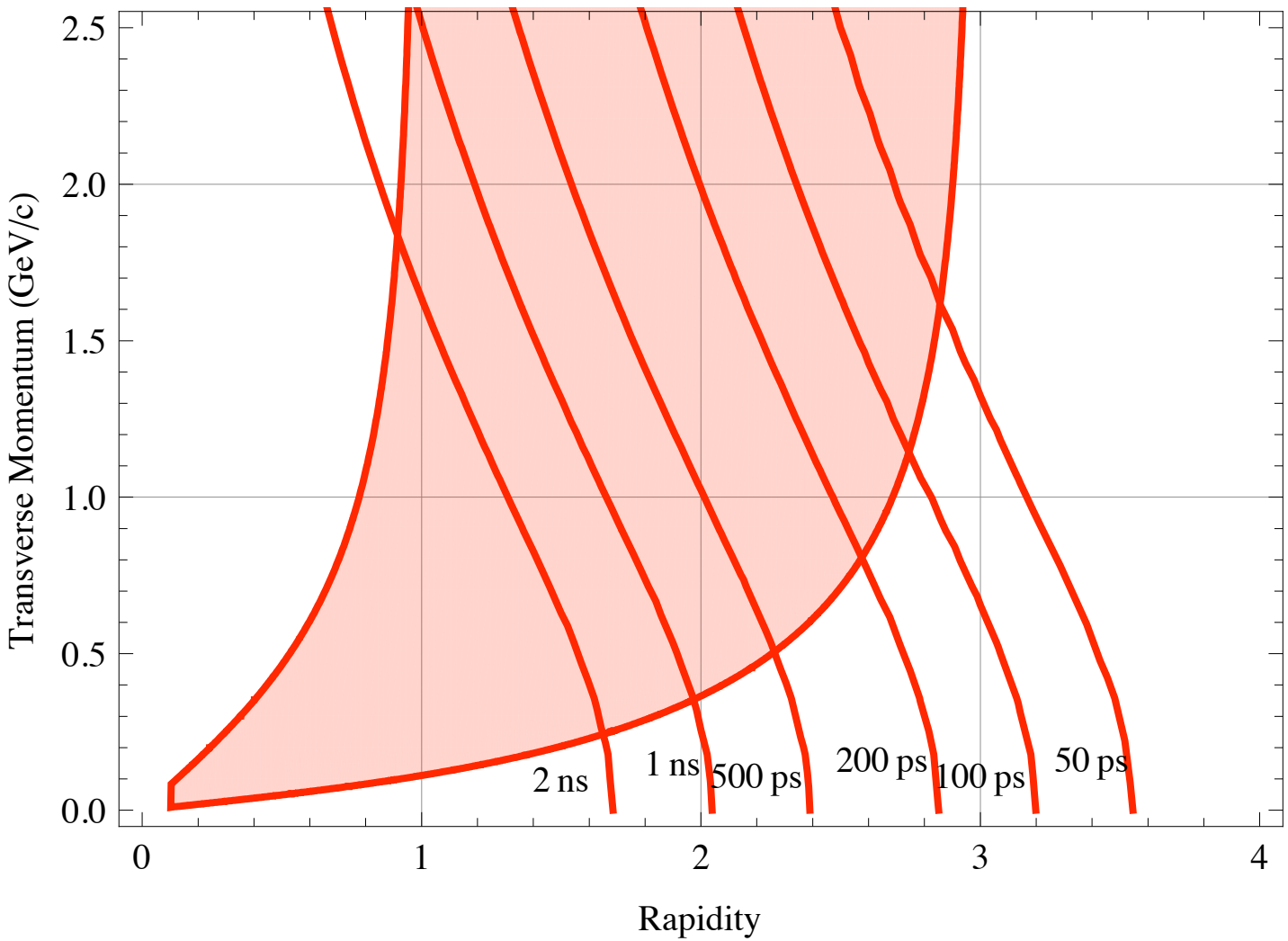
Lab momentum, jet region



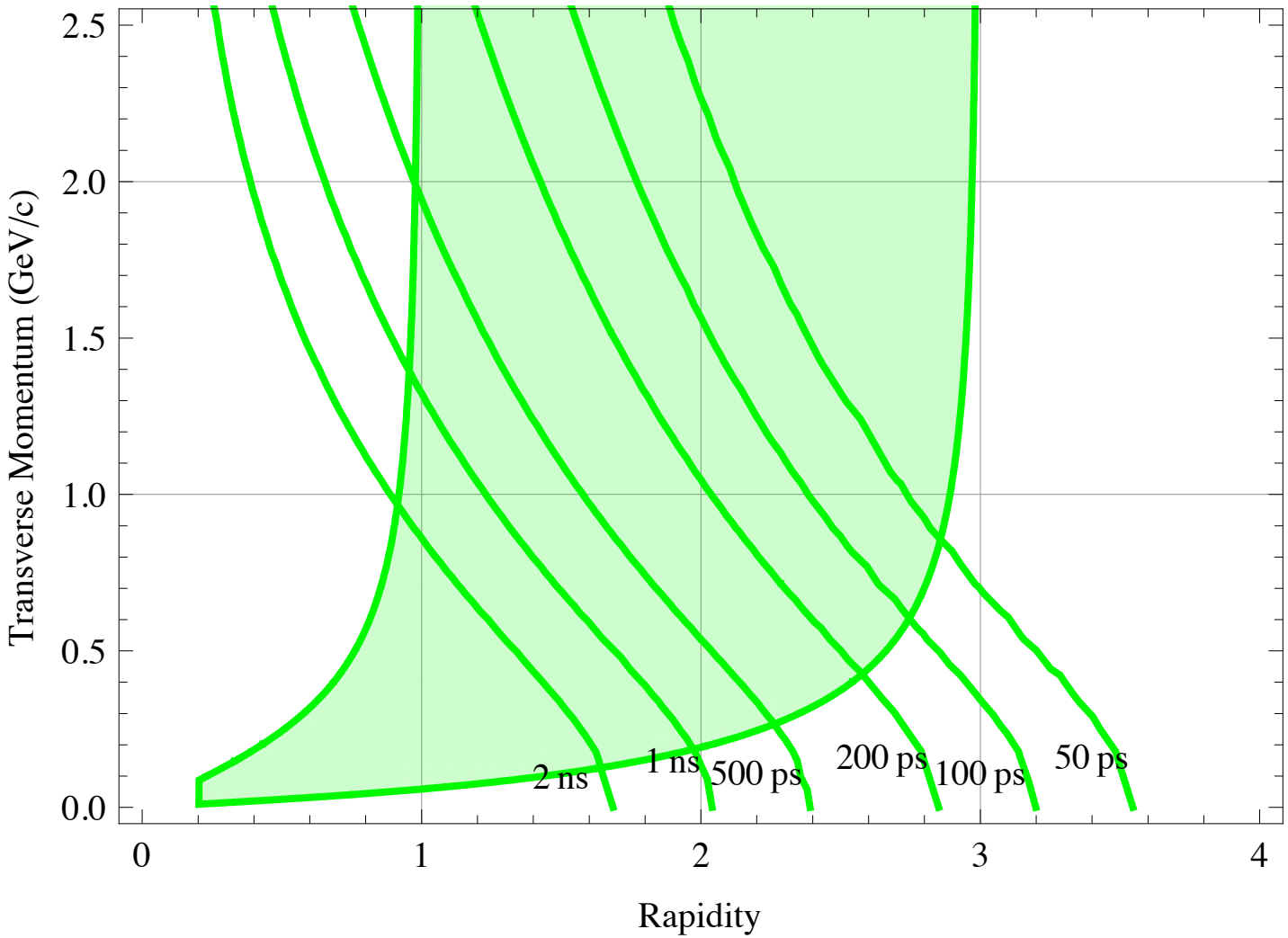
Lab momentum, hydro region



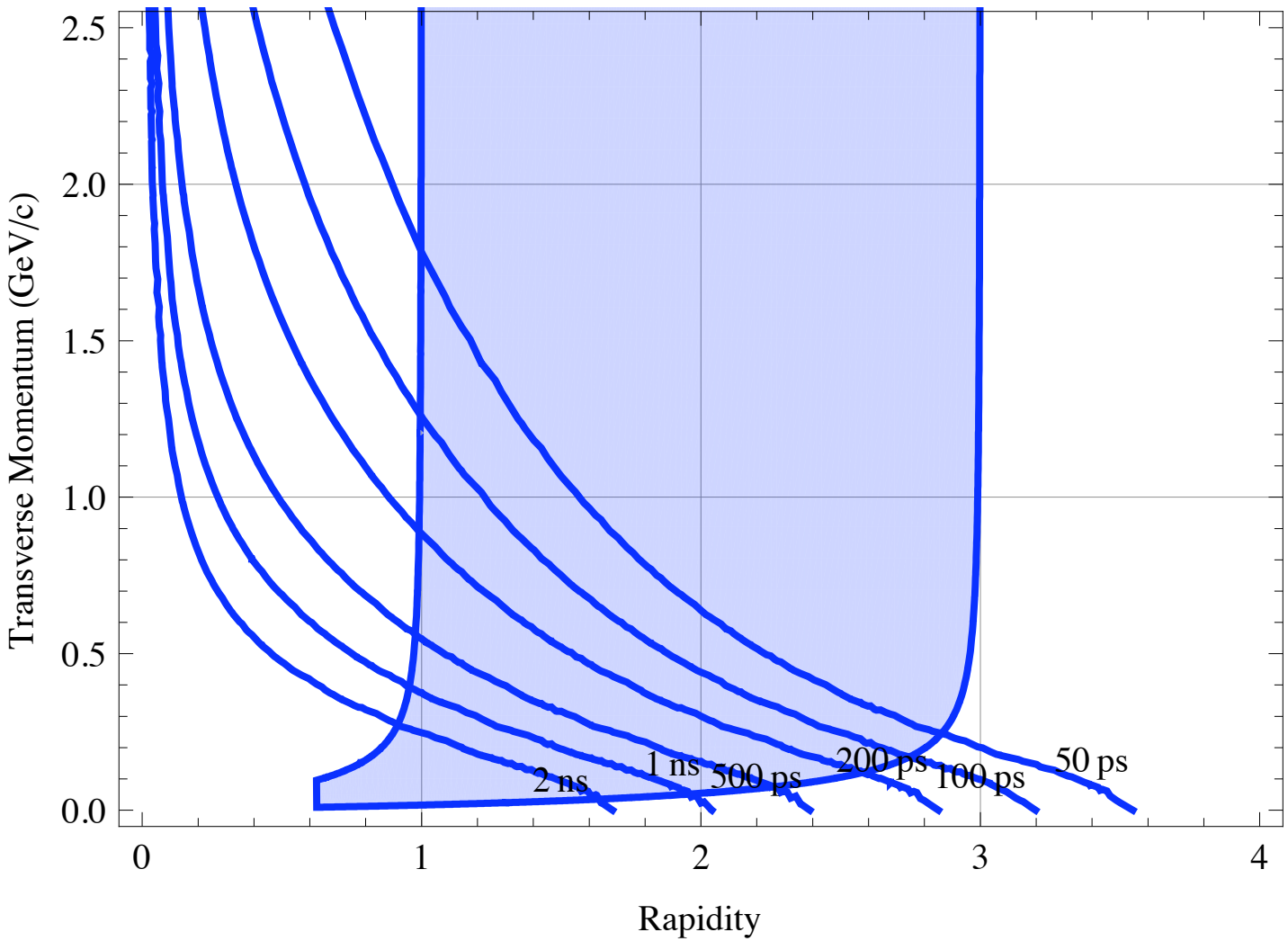
Proton TOF: Δt relative to lightspeed, from IP to back of muID (9m along z)



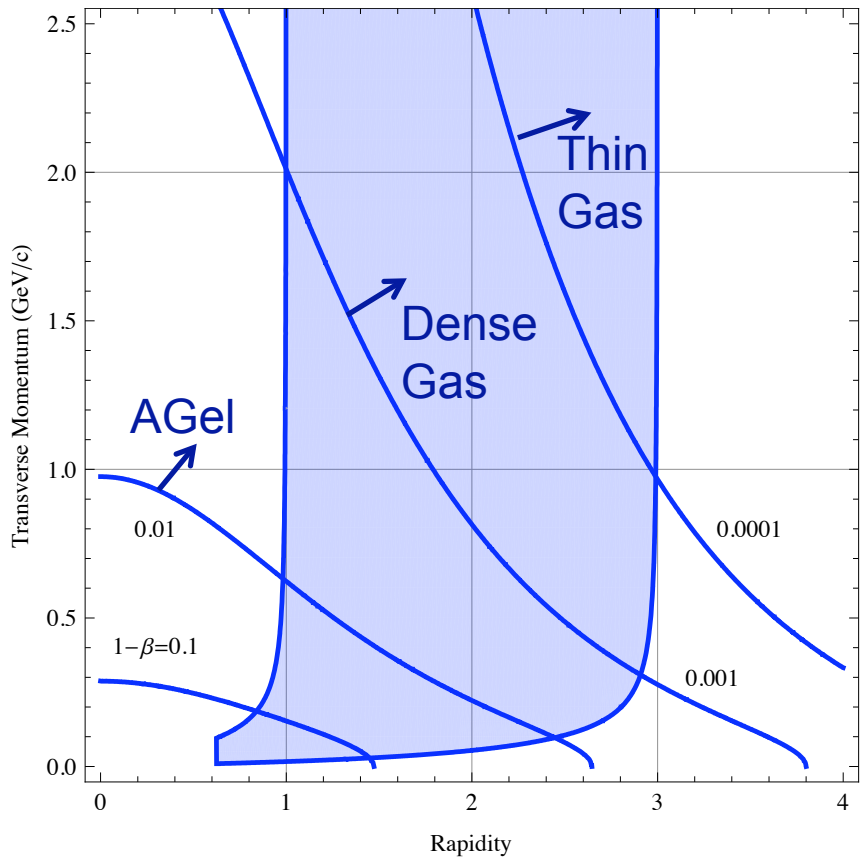
Kaon TOF: Δt relative to lightspeed, from IP to back of muID (9m along z)

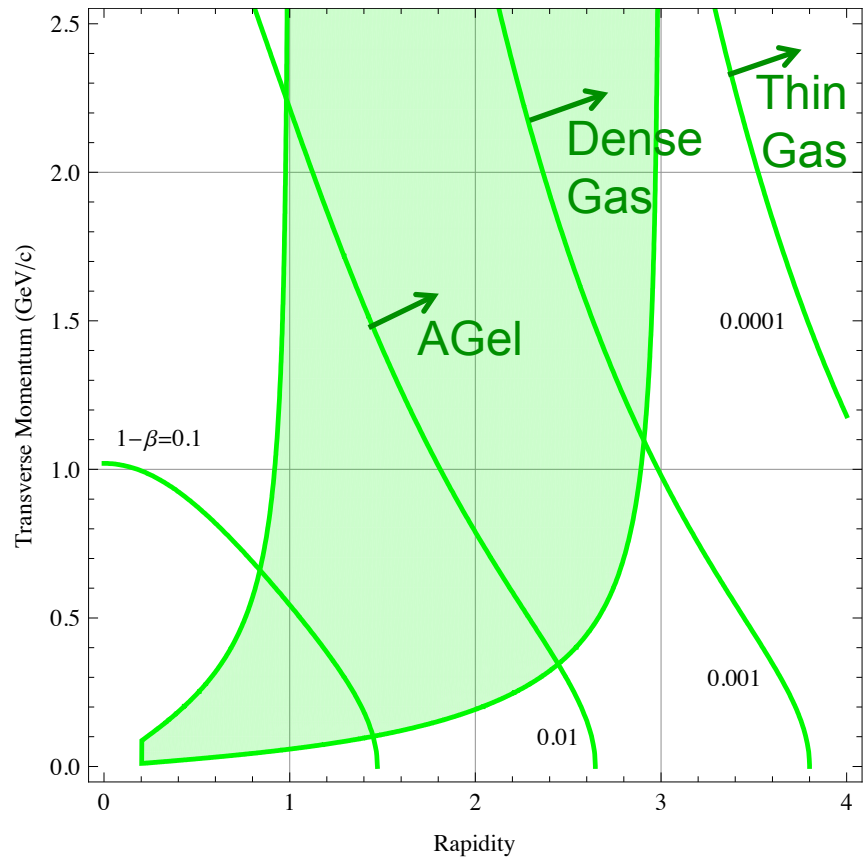


Pion TOF: Δt relative to lightspeed, from IP to back of muID (9m along z)

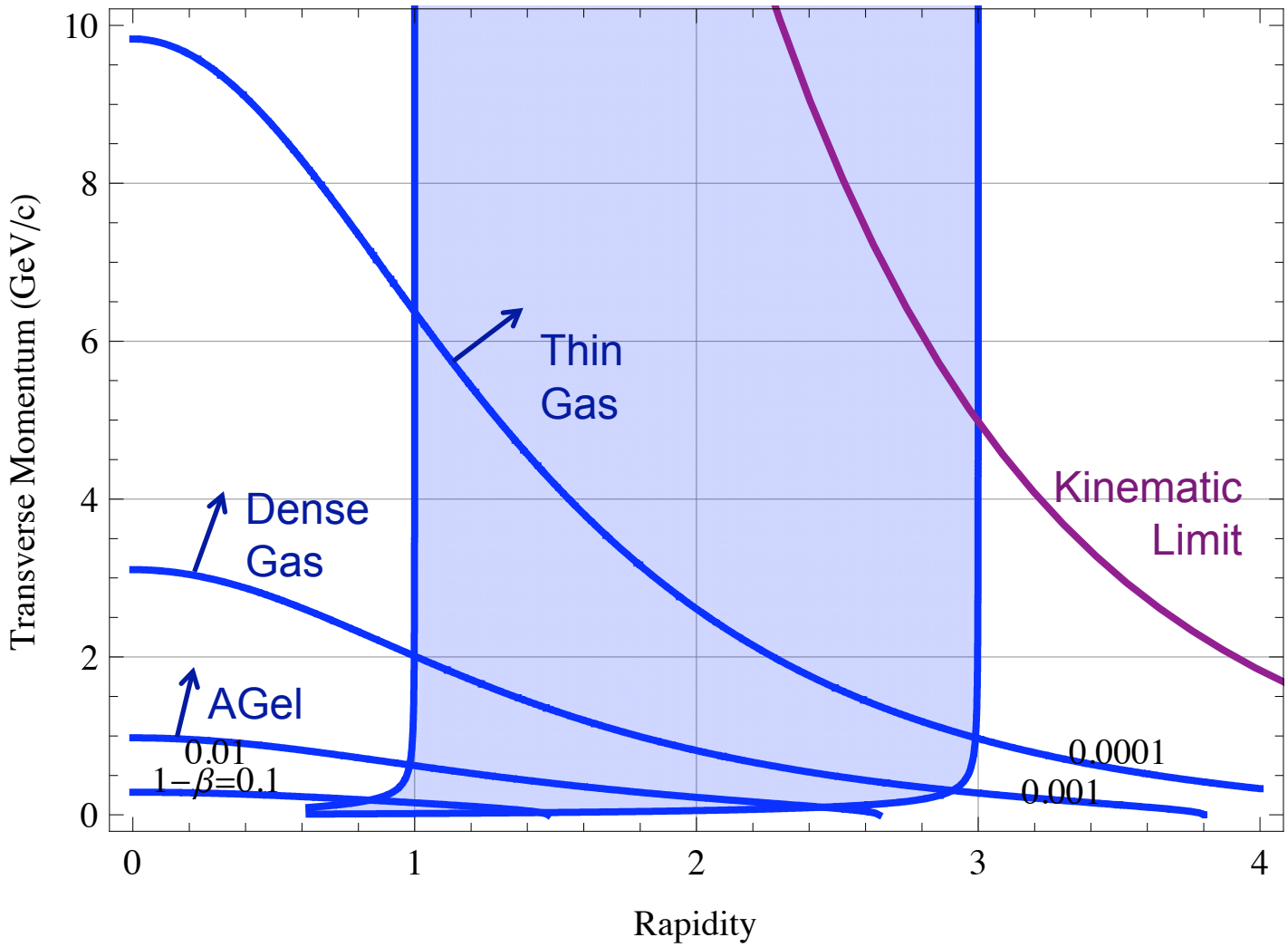


Ck? $1\text{-}\beta_{Lab}$ for Pions and Kaons





$1\text{-}\beta_{Lab}$ for Pions at higher p_T



Points to take home

With fixed η range, (Y,p_T) coverages don't perfectly align for π,K,p at low p_T; not a problem at higher p_T

Missing some lower-p_T coverage for protons at Y>2.5, otherwise coverage is reasonable for π,K,p

Kinematic limit compresses pT scale at forward rapidities; 0➔100 GeV, 1➔65 GeV, 2➔27 GeV, 3➔10 GeV

Proton, Kaon PID through TOF probably possible in hydro region

Pion, Kaon PID through Ck probably possible in hydro region

Need non-Ck system for e/π separation in higher p_T region