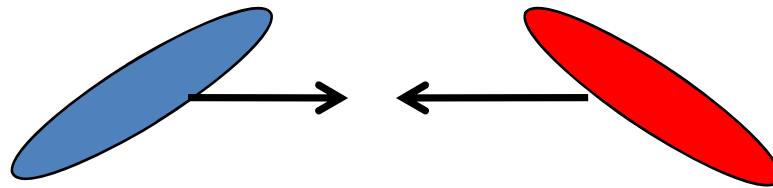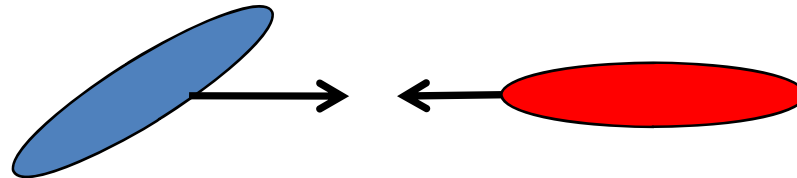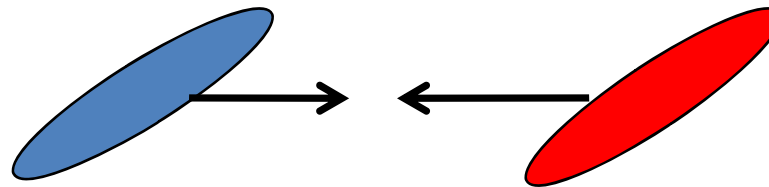# centre-of-mass frame

no crab

higher luminosity

1 beam crabbed

same luminosity as no crab

1 beam crabbed twice