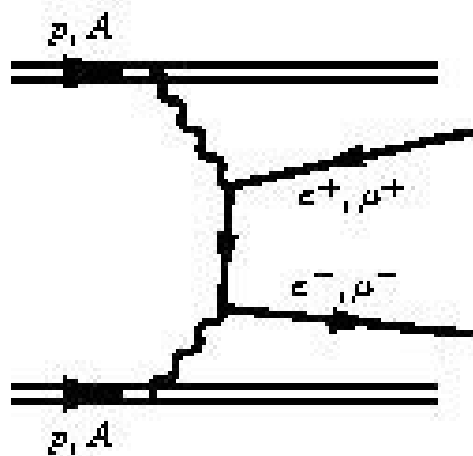
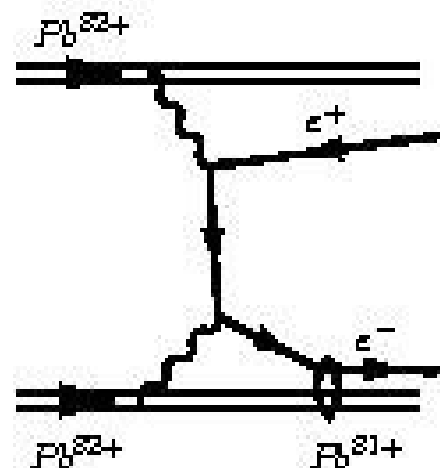


# Bound-free pair production at IP2

- Pair production in PbPb at LHC:



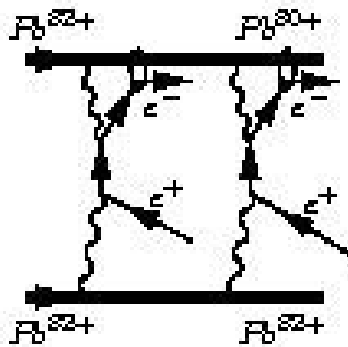
$\sigma(e^+e^- \text{ pair, PbPb}) \sim 100\text{'s kb}$



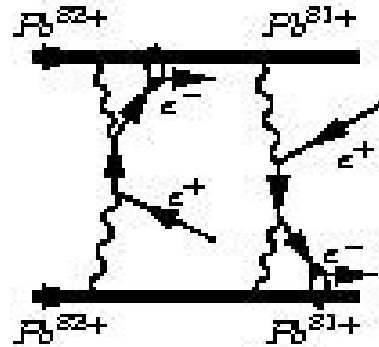
$\sigma(\text{b.free } e^+e^- \text{ pair, PbPb}) \sim 260 \text{ b}$   
(per beam)

# Multiple pair production

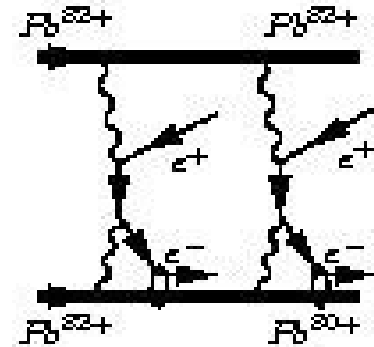
- Multiple pair production (uncorrelated)



Pb(80+)Pb(82+)



Pb(81+)Pb(81+)



Pb(82+)Pb(80+)

$$\sigma(80+,82+) > 6 \text{ mb}$$

ALICE@upgrade:

rate(min bias) = 50 kHz

rate Pb(81+) = 50 kHz x(260/7) ~ 1.8 MHz (either side)

rate Pb(80+) > 50 kHz x(0.006/7) ~ 42 Hz (either side)

## Open issues:

- size beam spots Pb(81+) and Pb(80+) ?
- Feasibility of simultaneous measurement of Pb(81+) and Pb(80+) ?
- Gas based detector ?
- Feasibility of simultaneous measurement of Pb(82+, 207) ? (neutron emitted, other side of Pb(81+, 208))