Special Announcements

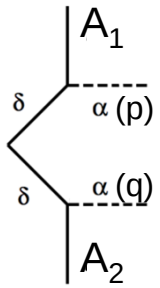
- **Visit of the Niels Bohr Museum today at 13:15**

- **Restart tomorrow morning at 08:30 instead of 09:00**
  - To fit the Fabiola Gianotti seminar at 10:15

Left Over questions (Part I)

❑ M_{CT} does not use MET ?

- No !



$$M_{CT}^2 = [E_T(A_1) + E_T(A_2)]^2 - [\vec{p}_T(A_1) - \vec{p}_T(A_2)]^2$$

❑ Use of low Pt Lepton for SUSY

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- Seems no problem ?

Electrons are reconstructed from clusters in the electromagnetic calorimeter matched to a track in the ID [74]. The "preselected" electrons are required to pass a variant of the "medium" selection of [74], which has been modified in 2012 to reduce the impact of pile-up [75]. These electrons must have, in the soft(hard)-lepton channels, $p_T > 7$ (10) GeV, $|\eta| < 2.47$ and a distance to the closest preselected jet of $\Delta R < 0.2$ or $\Delta R > 0.4$, where $\Delta R = \sqrt{(\Delta\eta)^2 + (\Delta\phi)^2}$. Electrons with $\Delta R < 0.2$ are kept, and the jet is discarded. Any event containing a preselected electron in the electromagnetic calorimeter transition region, $1.37 < |\eta| < 1.52$, is rejected.

Muons are identified either as a combined track in the MS and ID systems, or as an ID track matching with a MS segment [76,77]. Requirements on the quality of the ID track are identical to those in Ref. [78]. "Preselected" muons in the soft(hard)-lepton channels are required to have $p_T > 6$ (10) GeV, $|\eta| < 2.4$ and $\Delta R > 0.4$ with respect to the closest preselected jet.

jets [61].

The "signal" electrons must pass a higher threshold of 10 (25) GeV in the soft(hard)-lepton channels and are required to be isolated. The isolation requirements depend on the analysis channel, being tighter for channels in which the background coming from misidentified leptons is more important. In the soft-lepton channels, the scalar sum of the p_T of tracks within a cone of radius $\Delta R = 0.3$ around the electron (excluding the electron itself) is required to be less than 16% of the electron p_T. The distance along the beam direction, $z_0 \sin\theta$, of the electron to the primary vertex must also be ≤ 0.4 mm. Finally, the soft dimuon channel also demands that the significance of the distance of closest approach of the electron to the primary vertex be within three standard deviations in the transverse plane. In the hard-lepton channels, the scalar sum of the p_T of tracks within a cone of radius $\Delta R = 0.2$ around the electron (excluding the electron itself) is required to be less than 10% of the electron p_T.

Isolation is also required in the "signal" muon definition. In the soft-lepton channels, the scalar sum of the p_T of tracks within a cone of radius $\Delta R = 0.3$ around the muon candidate (excluding the muon itself) is required to be less than 12% of the muon p_T. The same requirement as in the electron isolation is applied on the distance to the primary vertex along the beam direction and, in the soft dimuon channel, on the significance of the distance of closest approach to the primary vertex in the transverse plane. In the hard-lepton channels, the scalar sum of the p_T of tracks within a cone of radius $\Delta R = 0.2$ around the muon candidate (excluding the muon itself) is required to be less than 1.8 GeV.