Like-Sign Dilepton Paper Reading

Motivation: Models beyond SM can produce like-sign lepton signatures (SUSY in particular) while SM contributions are small

Selections

- Triggers: unknown
- 2 leptons with $p_T > 11$ GeV, eta coverage not mentioned
- Require isolation (both track and calorimeter, rather long discussion...)
- Require p_T of lepton system > 20 GeV
- Require mass of lepton system > 10 GeV

- Remove conversions, events consistent with J/ψ and Z bosons

Like-Sign Paper Reading

Backgrounds

- Dibsons (WZ, ZZ), estimated using Pythia and MCFM.
- fake leptons: using MC and data. Rate compares with Pythia in Z events, ID efficiencies calculated using control samples.

Checks of background estimates performed in different kinematic regions

Systematics: trigger eff, lep. id eff., lumi., PDF, Q^2 variations? Have little effect on limits.

Like-Sign Paper Reading

Results:

- 0 events observed, consistent with background expectations

- Calculate "model-independent" limits using WZ-like events for the acceptance calculation.

- Calculate model-dependent limits for SUGRA type-model. How does it compare with other searches?