SUSY Phenomenology

Sheet 5

Exercice 1: Gluinos and squarks at the LHC

Draw a Feynman graph for each of the possible processes with the following signature:

- 4ℓ
- 3ℓ
- 2ℓSS
- 2ℓOS
- 1ℓ

How would these signatures look like in a detector?

Exercice 2: Slepton search

Let us look at the following process:

$$p\,p \to \tilde{\ell}\,\tilde{\ell} \to \ell\,\tilde{\chi_0}\,\ell\,\tilde{\chi_0}$$

- Draw the Feynman graph of this process.
- How does the signature of this process look like?
- What are the corresponding underground processes (there are 3 important processes)?
- On which variable would you cut to get rid of the underground?
- What would change for an e^+e^- collider?