

Exercise 1: Homework (1)

1. Redo sensitivity studies for ee and $mumu$. What do we gain ?

- Assume WW still dominant since $Z+X$ background can be killed by a Z veto
- Compute $Z_n(ee)$ and $Z_n(mumu)$
- Add all Z_n in quadrature to obtain the new sensitivity
 - Does it help to exclude the signal ??

2. Can you discover the Higgs boson ($H \rightarrow WW$) ?

- Focus on the emu channel
- Assume same preselection and that WW is still the dominant background
- How to modify the cuts to enhance Higgs signal ? Consider new discriminant variable ?