Diffractive and Exclusive Landscape

Approximate and for 8 TeV : want updated and for 13 TeV but ...
Useful for orientation.

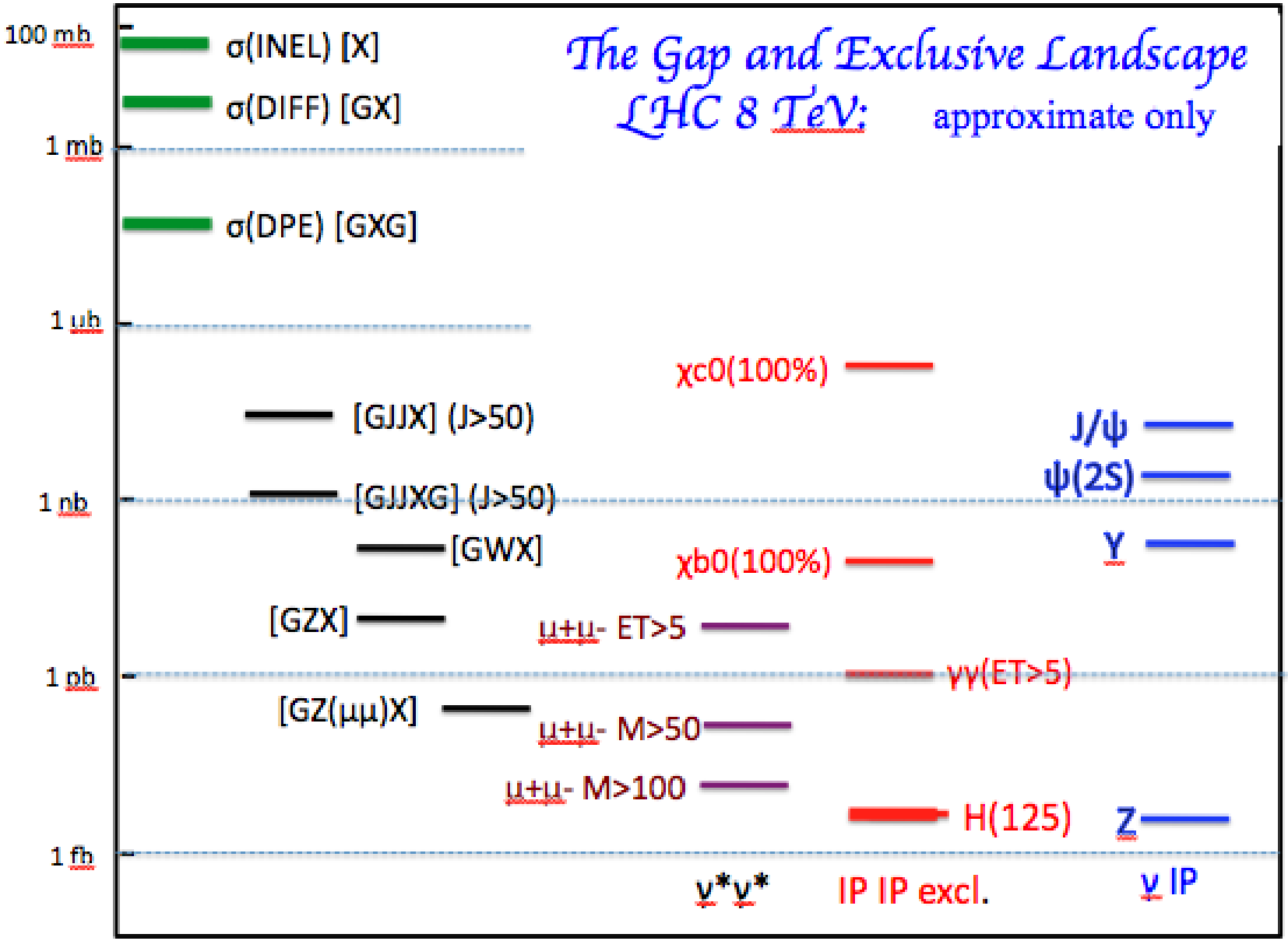
Per 100 hours of running (~ 1 week or less) with
25ns/X (40 MHz) and <PU> = μ = 1 so Prob(1) = 37%
with σ(inel) = 70 mb
get L(eff,1) = 80 pb^{-1}

E.g. take exclusive p + γγ + p with $E_T(\gamma) > 5$ GeV → ~ 200 events in 2 weeks
Unique test of (NP + P) QCD and closely related to exclusive p + Higgs + p

CMS search: no candidates.
CDF observation (42 candidates) but ET(γ) > 2.5 GeV, √s = 1.96 TeV.

>> Probably can be done with a few additional collisions, not with many

~ 1200 exclusive (photoproduced) Υ(1S) → e+e- or μ+μ- with no pile-up
(This is more forgiving of PU)


The Gap and Exclusive Landscape
LHC 8 TeV:
approximate only
100 mb
1 mb
1 μb
1 nb
1 pb
1 fb
σ(INEL) [X]
σ(DIFF) [GX]
σ(DPE) [GXG]
[GJJX] (J>50)
[GJJXG] (J>50)
[GWX]
[GZX]
[GZ(μμ)X]
χc0(100%)
χb0(100%)
μ+μ- ET>5
μ+μ- M>50
μ+μ- M>100
γγ(ET>5)
H(125)
J/ψ
ψ(2S)
Υ
Z
ν*ν*
IP IP excl.
ν IP