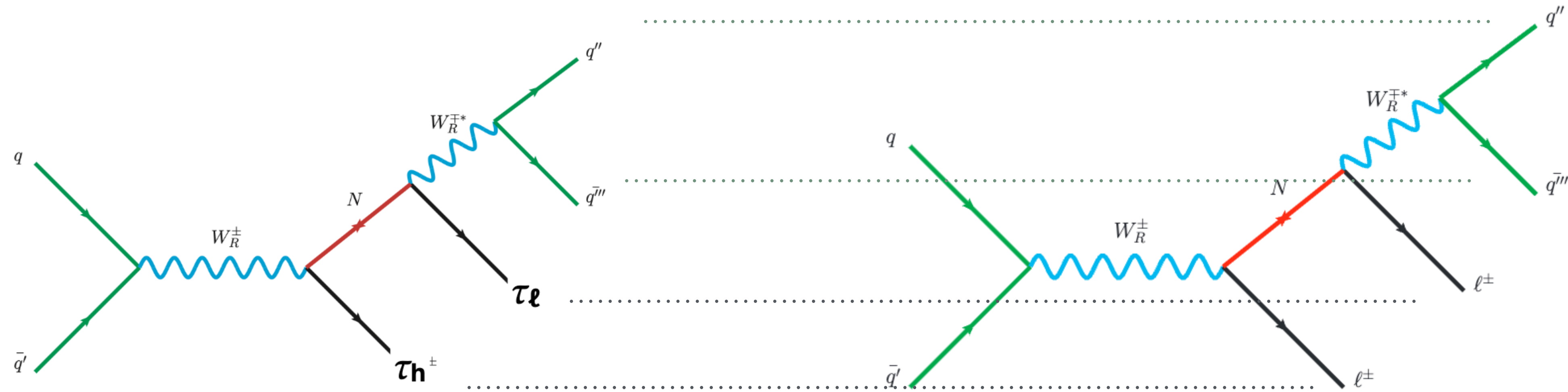


Search For W_R Using t/b Jets

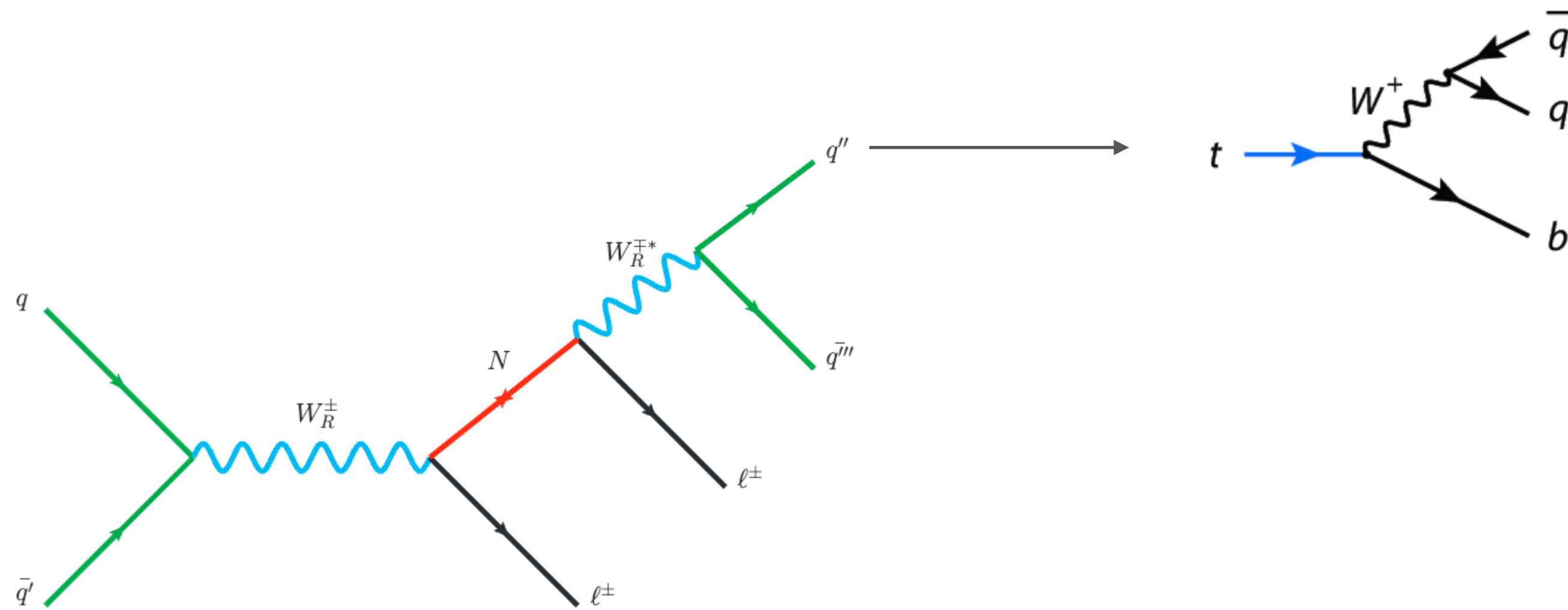
Searching For t/b Channel



What is different in diagram:

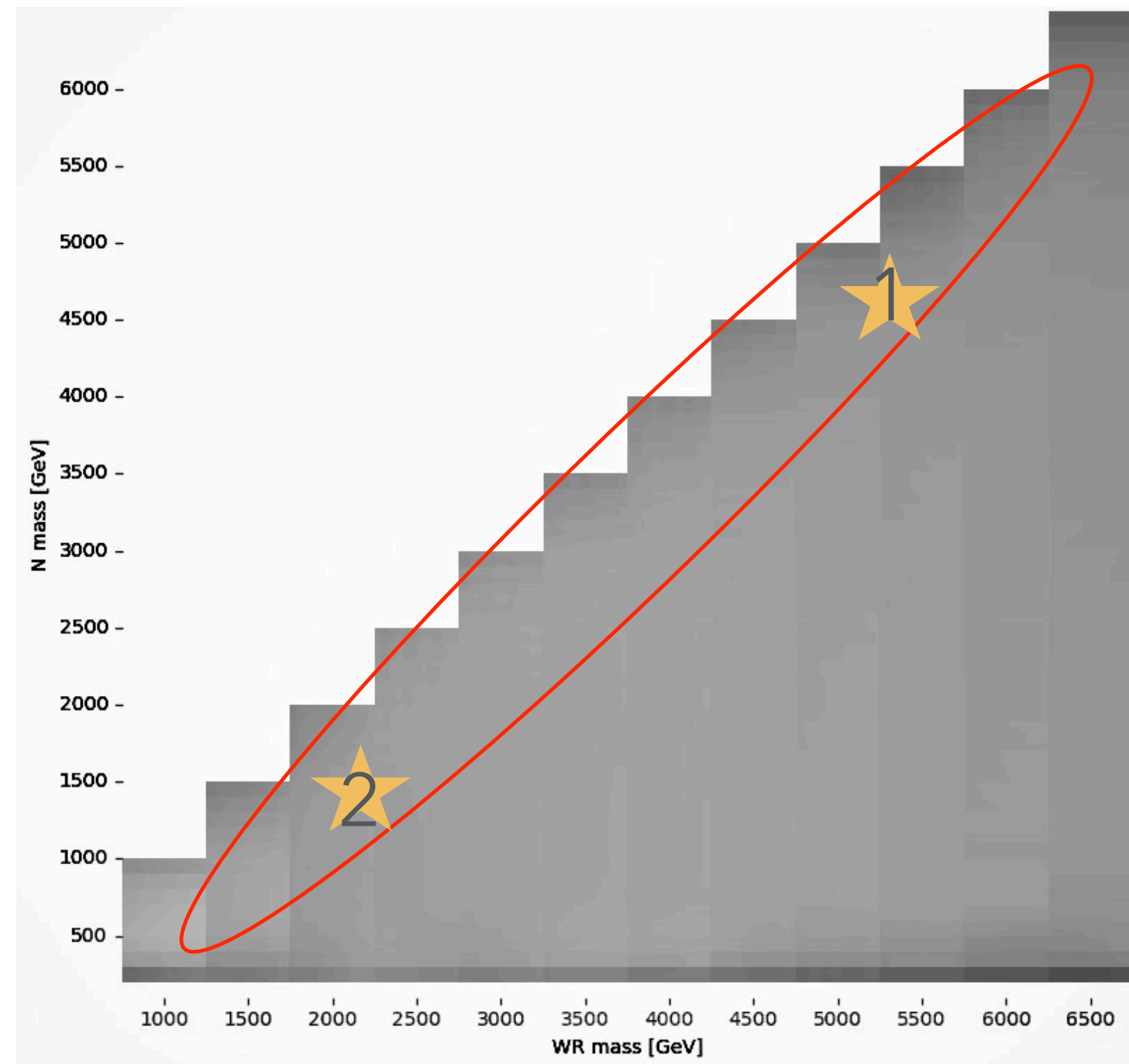
- Out going quark : ud sc tb \rightarrow tb
- lepton : tau \rightarrow e/mu

Searching Mass Region



- Topology
If all structure is boosted , more than 5 substructure (top - 3 jets , b quark , leptons) mixed :resolved topology required
- Setting mass of W_R N similar -> makes N slow : W_R^* , lepton separated
-> makes W_R^* slow : t jets & b jet separated

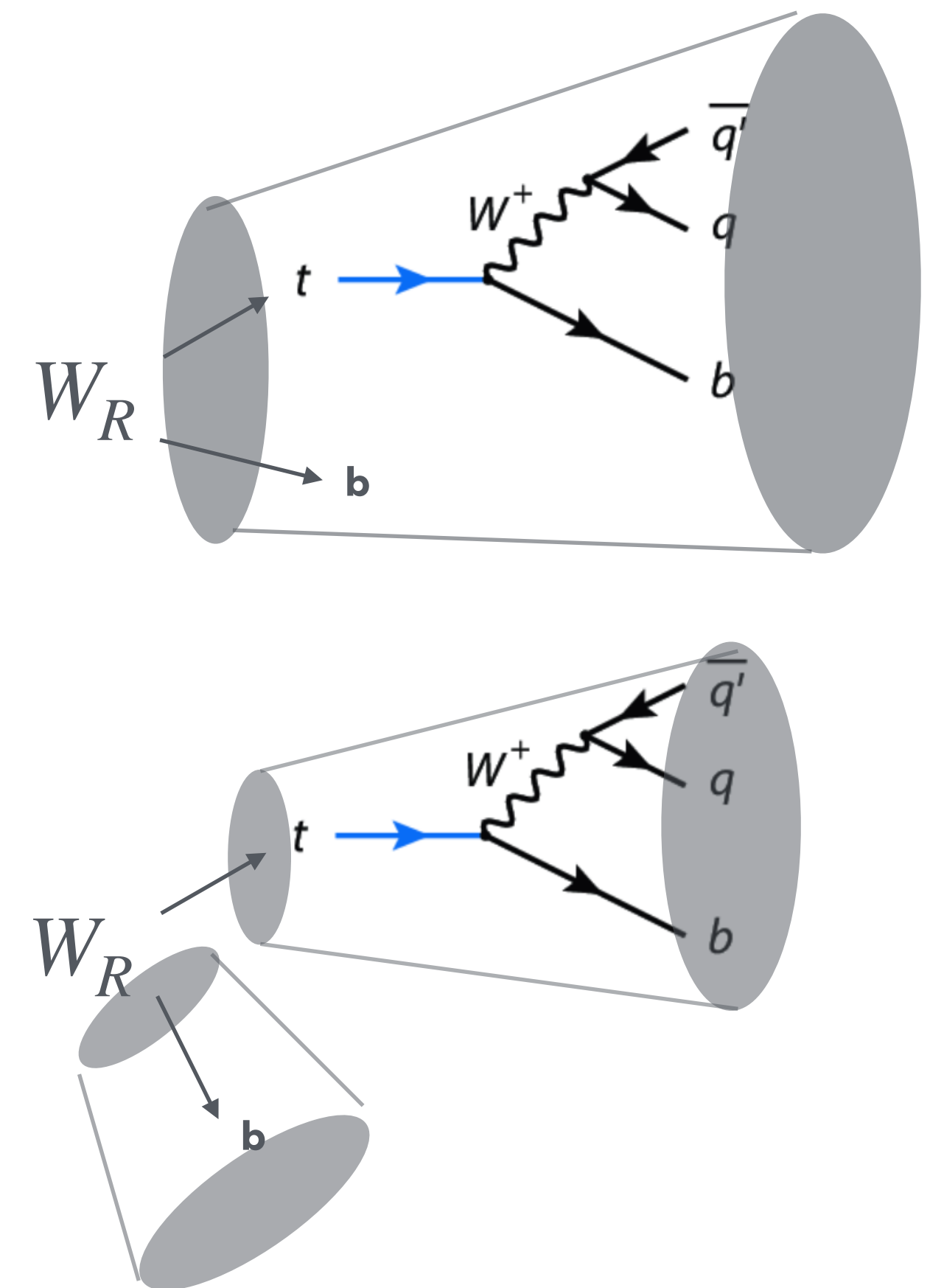
Detailed Topology Of Main Target



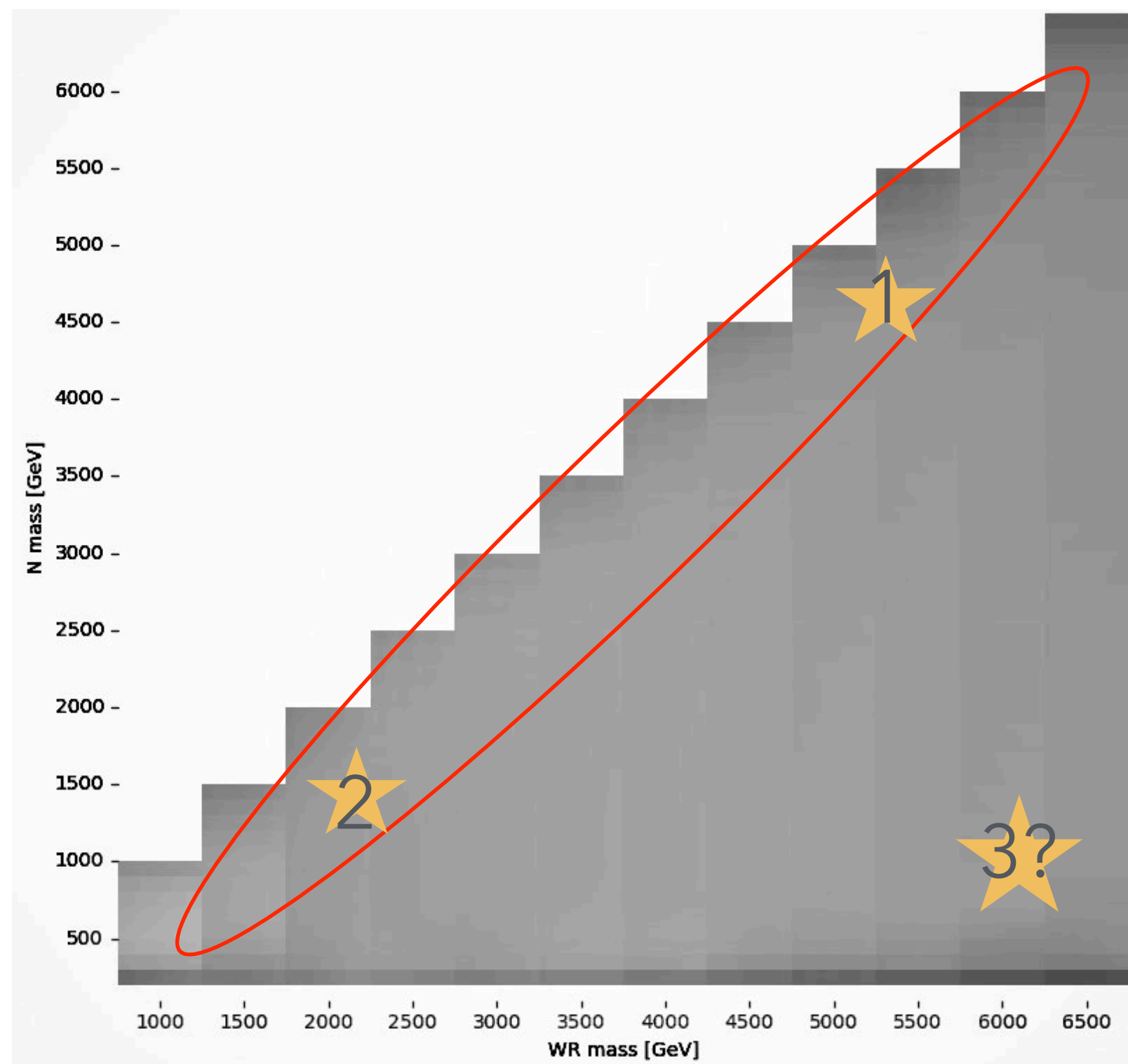
- Main target : $W_R \sim N$

1. High mass W_R
Jets are boosted which can be inside one jet

2. Low mass W_R
Jets are separated by two jets,



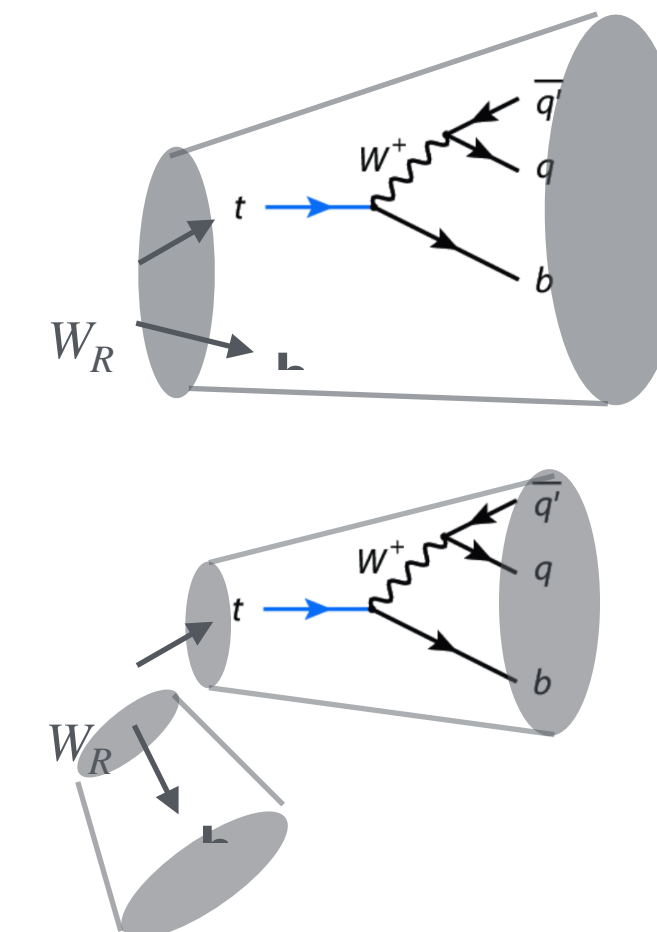
Subtarget Topology in Mass $W_R \sim N$



- Main target : $W_R \sim N$

1. High mass W_R
Jets are boosted which can be inside one jet

2. Low mass W_R
Jets are separated by two jets,

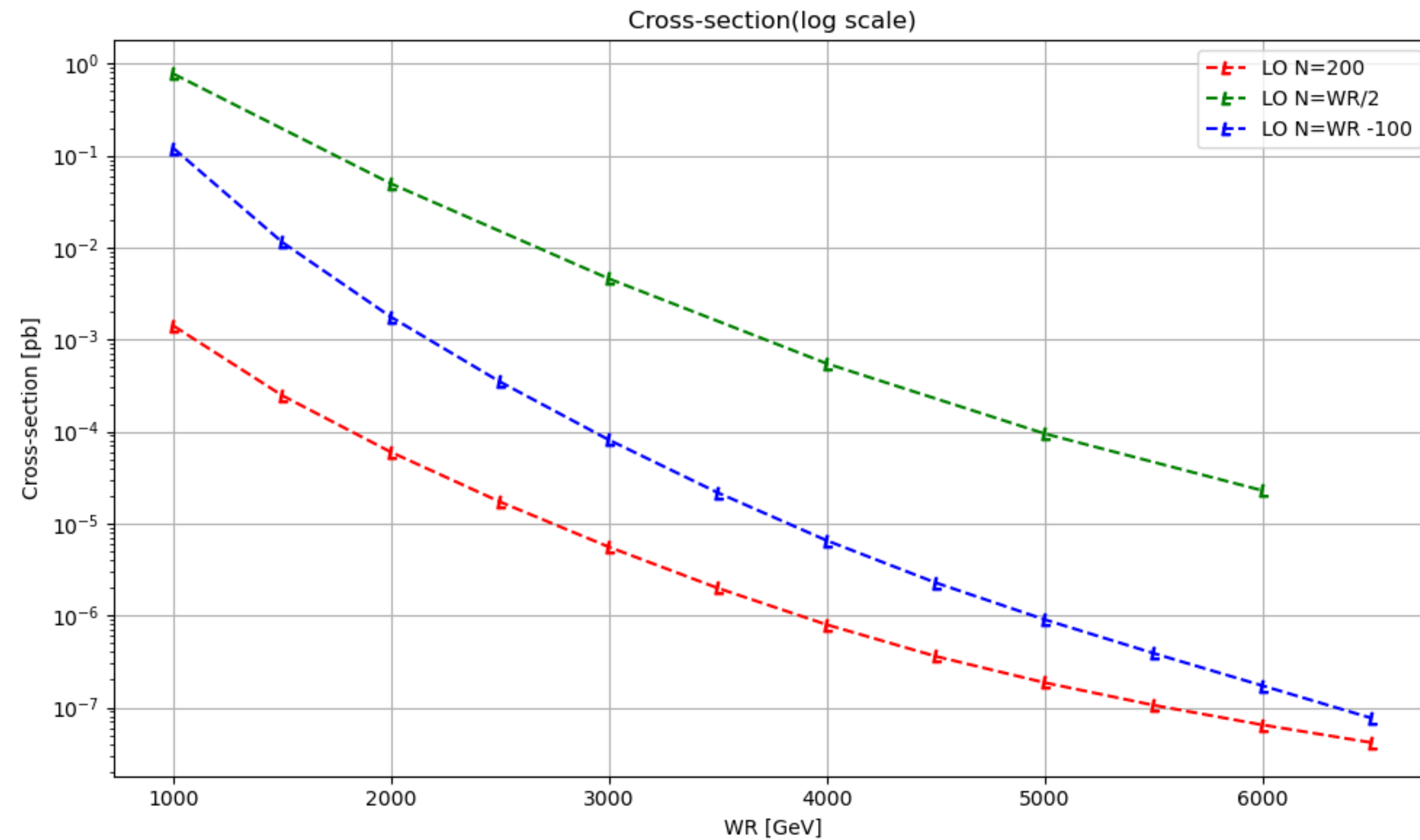


Sub-target : High W_R low N

- Onshell W_R is not useful : boosted
- Offshell W_R can be useful..? : Low mass W_R produced , similar to topology. & low pdf variation

Cross sections checking

Structure draft



- Checked cross section with mad graph

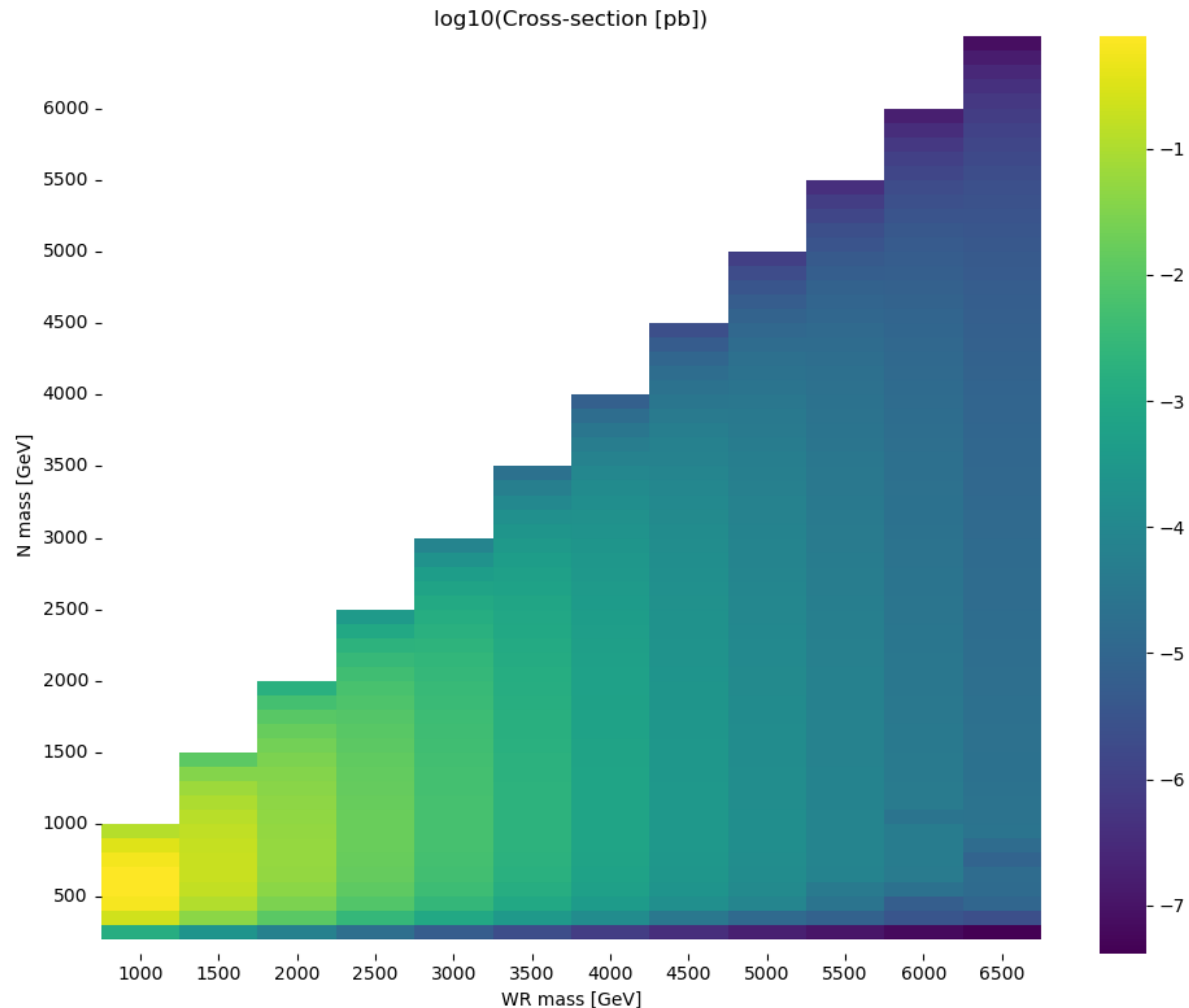
(v.2.9.18 20,000 run)

- Due to phase space (top $\sim 173\text{GeV}$)
cross section is constrained

- N phase space makes $N=WR/2 > N = WR-100$

Cross Sections Checking

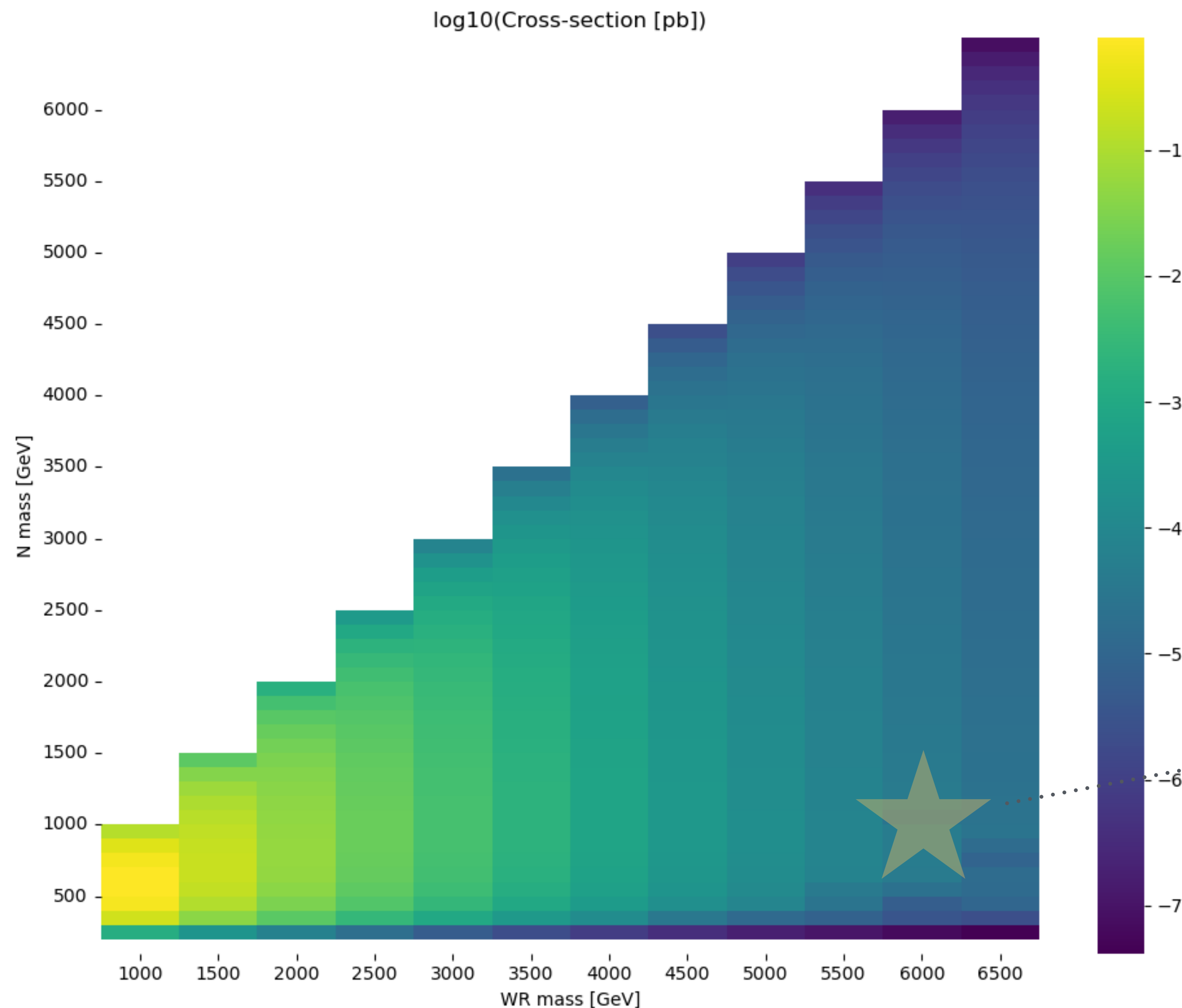
Full cross section



- W_R fixed & N increase
Cross section **increases** -> **decrease**
: top quark phase space constraint ->
N phase space constraint -> ..

Cross Sections Checking

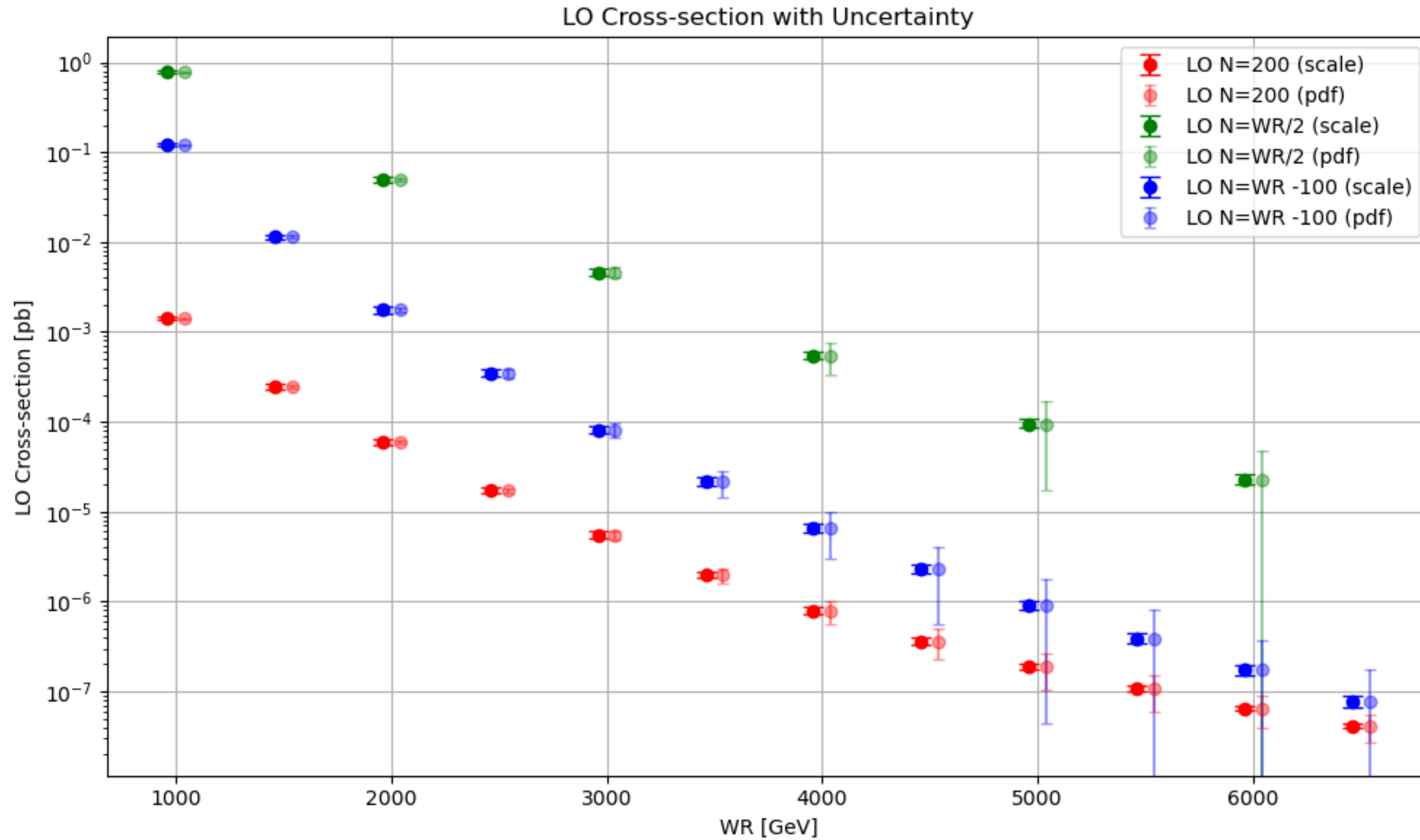
Full cross section



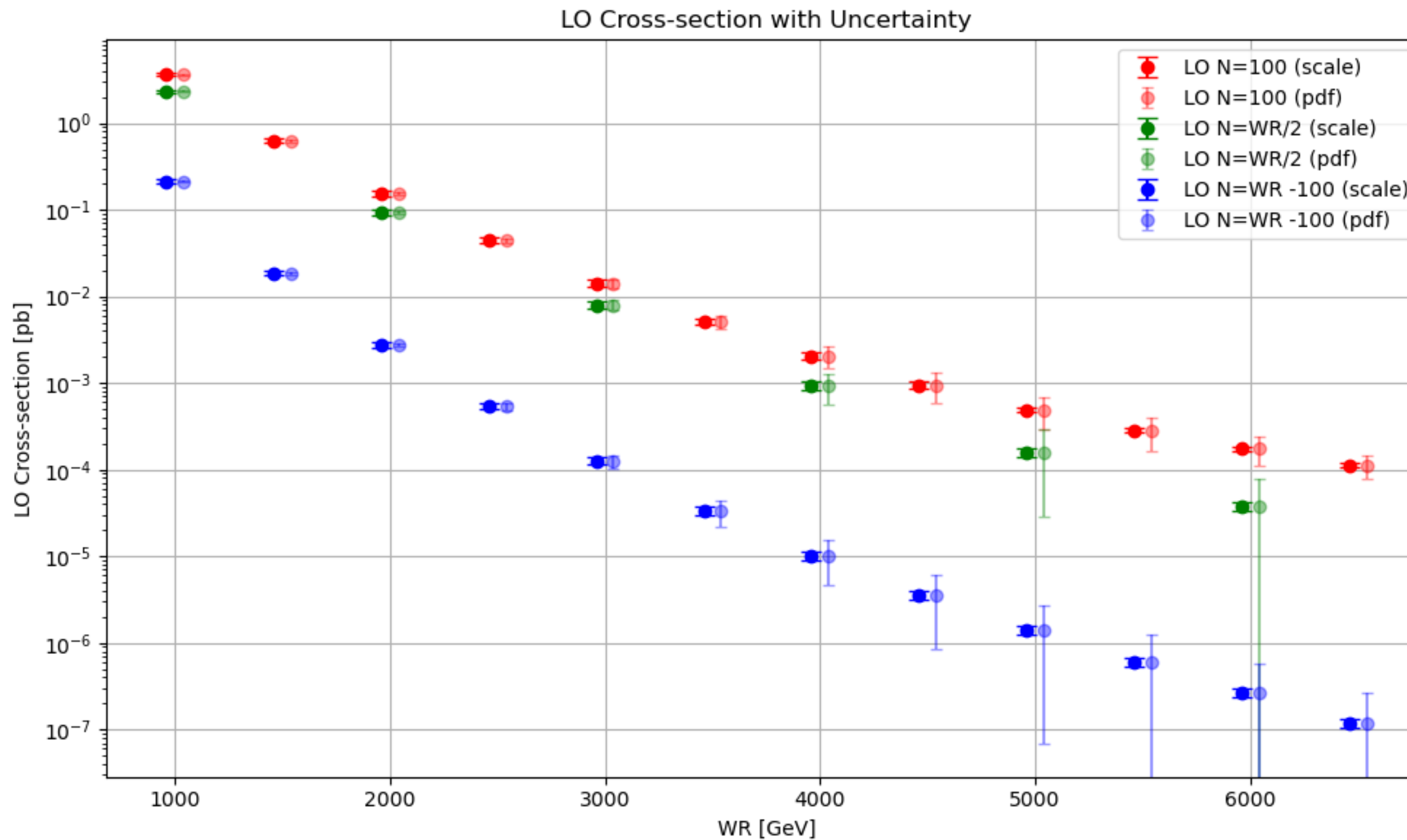
- W_R fixed & N increase
Cross section **increases** -> **decrease**
: top quark phase space constraint ->
N phase space constraint -> ..
- Now checking on # of offhsell W_R in this region

Backups

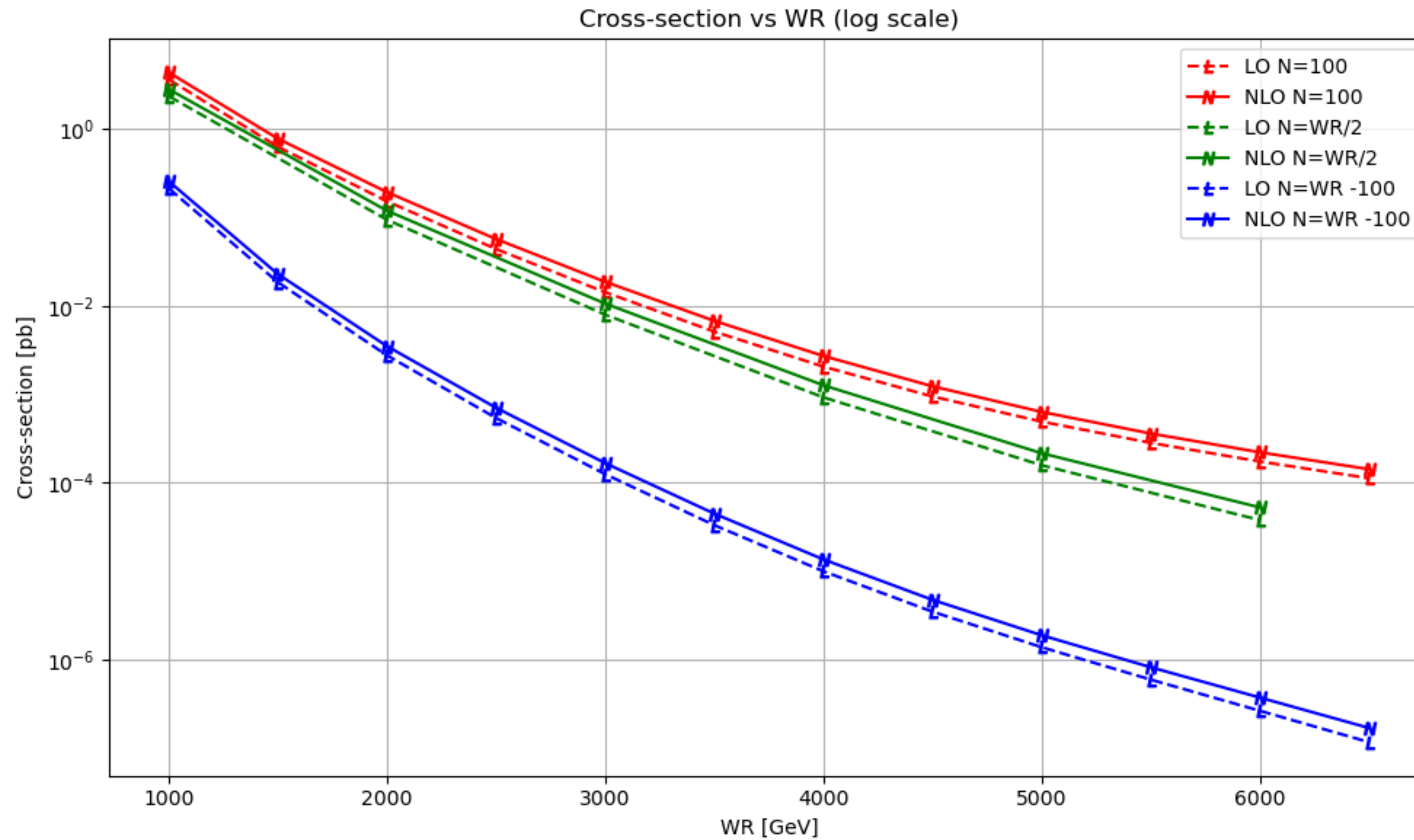
Pdf & scale variation



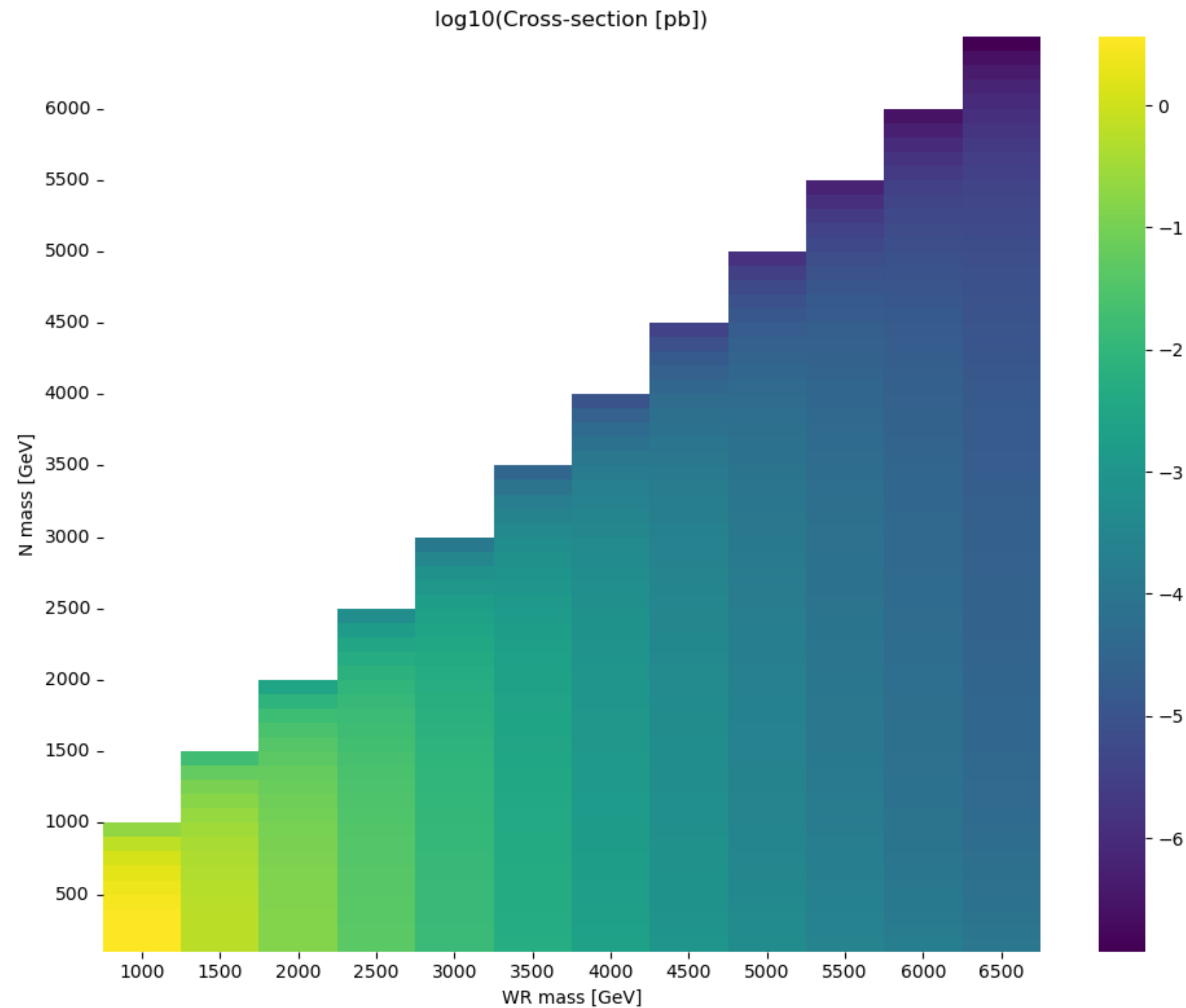
pdf & scale variation for tau



Cross section for tau



Full cross section for tau



Thanks!