

DY+2jet Validation

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Materials

- The gridpacks I have generated so far are in my EOS disk: <https://cernbox.cern.ch/s/v8S90kHcg5FI0Re>
- The cards are in the directory "cards" of my genVal repository: <https://gitlab.cern.ch/bolinl/genVal.git>

DY inclusive: proc_card.dat

```
import model loop_sm-ckm_no_b_mass
```

```
define vl = ve vm vt
```

```
define vl~ = ve~ vm~ vt~
```

```
define ell+ = e+ mu+ ta+
```

```
define ell- = e- mu- ta-
```

```
generate p p > ell+ ell- [QCD] @0
```

```
add process p p > ell+ ell- j [QCD] @1
```

```
add process p p > ell+ ell- j j [QCD] @2
```

```
output dyellell012j_5f_NLO_FXFX_V2 -nojpeg
```

DY inclusive Xsec: MG2918 vs MG352

	Xsec (0jet) [pb] (matching eff.)	Xsec (1jet) [pb] (matching eff.)	Xsec (2jet) [pb] (matching eff.)	total (matching eff.)
MG2918	5126.02 +/- 10.17 (85.56%)	956.73 +/- 3.21 (27.72%)	359.08 +/- 2.29 (22.10%)	6424.52 +/- 11.23 (58.04%)
MG352	5146.00 +/- 10.36 (85.70%)	932.73 +/- 3.02 (28.37%)	373.37 +/- 2.42 (20.88%)	6436.30 +/- 11.38 (58.09%)

DY+1jet: proc_card.dat

```
import model loop_sm-ckm_no_b_mass
```

```
define vl = ve vm vt
```

```
define vl~ = ve~ vm~ vt~
```

```
define ell+ = e+ mu+ ta+
```

```
define ell- = e- mu- ta-
```

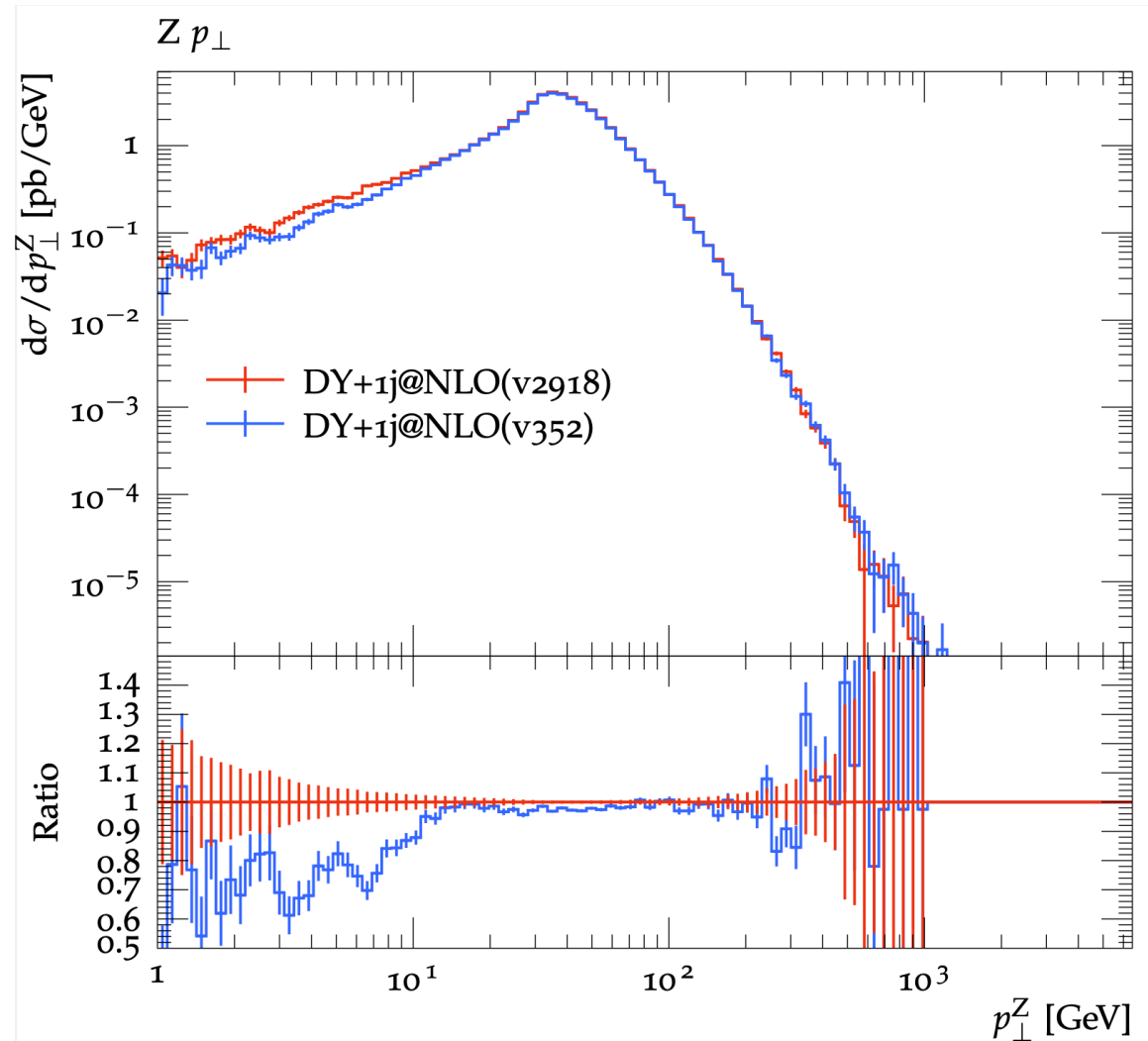
```
generate p p > ell+ ell- j [QCD]
```

```
output dyellell1j_5f_NLO_FXFX_V2 -nojpeg
```

DY+1jet Xsec: MG2918 vs MG352

	Xsec (DY+1j) [pb] (before matching)	Xsec (DY+1j) [pb] (after matching)	Matching eff.
MG2918	3468.00 +/- 6.89	954.22 +/- 1.95	27.51%
MG352	3304.00 +/- 6.89	931.86 +/- 1.99	28.20%

DY+1jet: MG2918 vs MG352



DY+2jet: proc_card.dat

```
import model loop_sm-ckm_no_b_mass
```

```
define vl = ve vm vt
```

```
define vl~ = ve~ vm~ vt~
```

```
define ell+ = e+ mu+ ta+
```

```
define ell- = e- mu- ta-
```

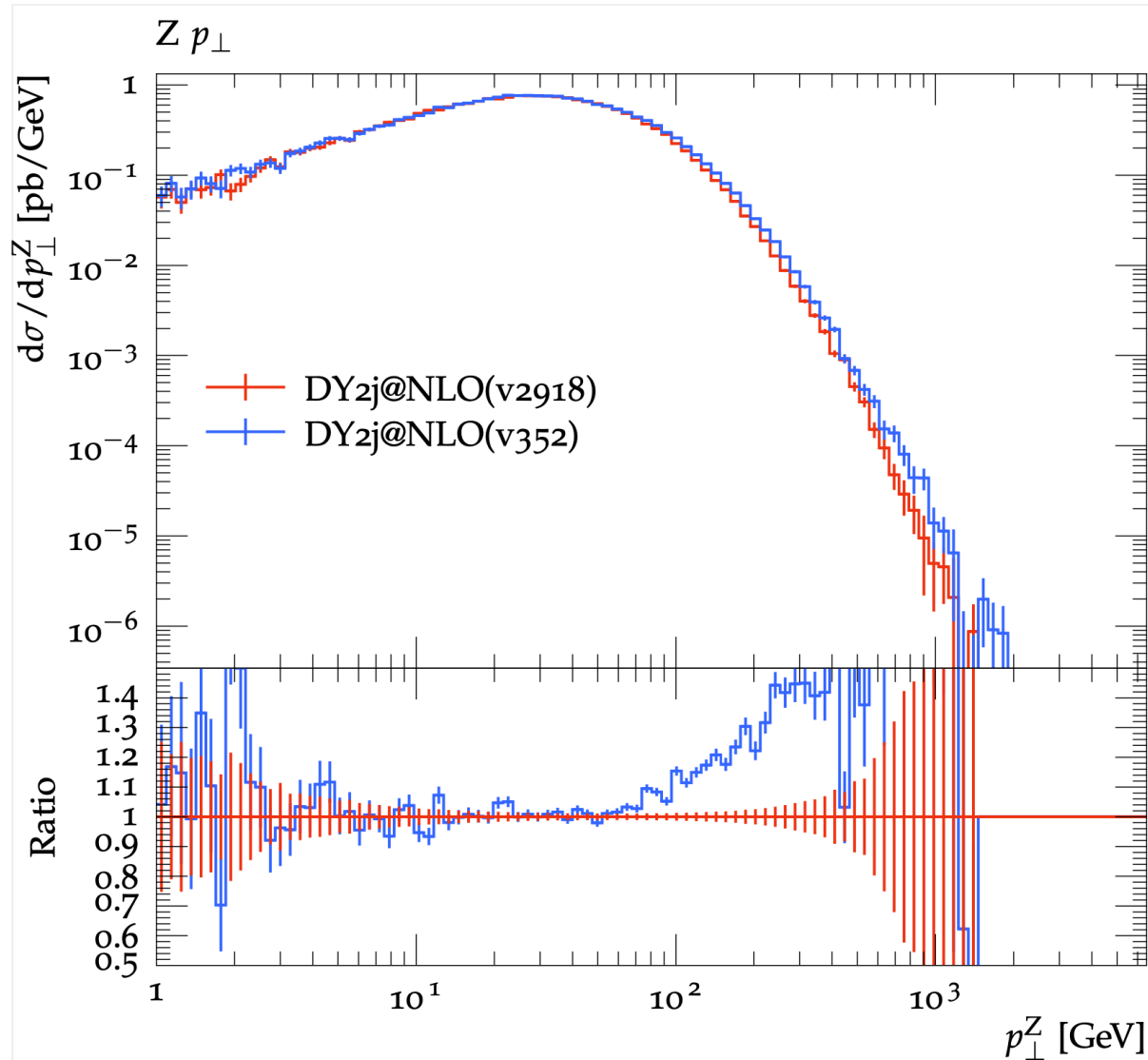
```
generate p p > ell+ ell- j j [QCD]
```

```
output dyellell2j_5f_NLO_FXFX_V2 -nojpeg
```

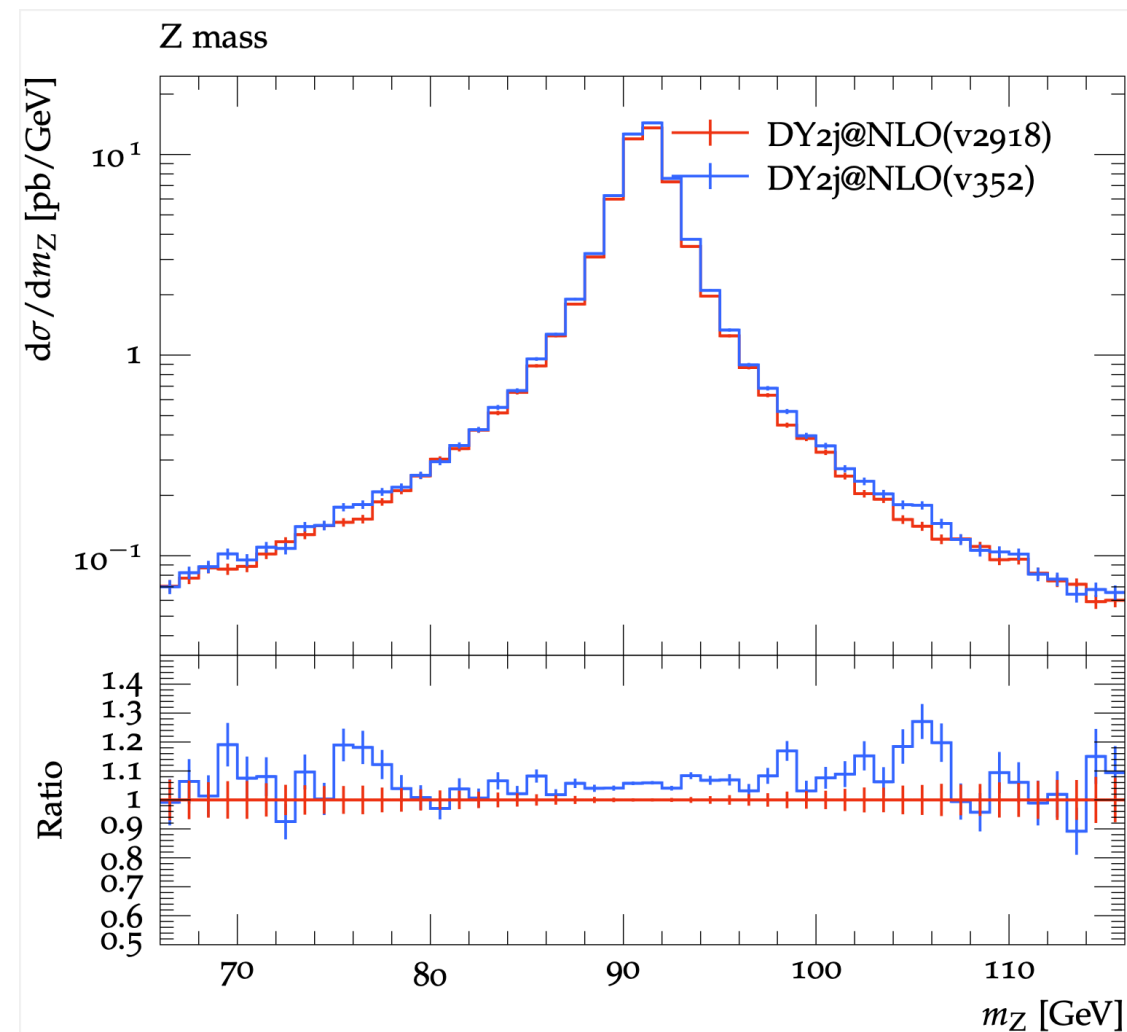
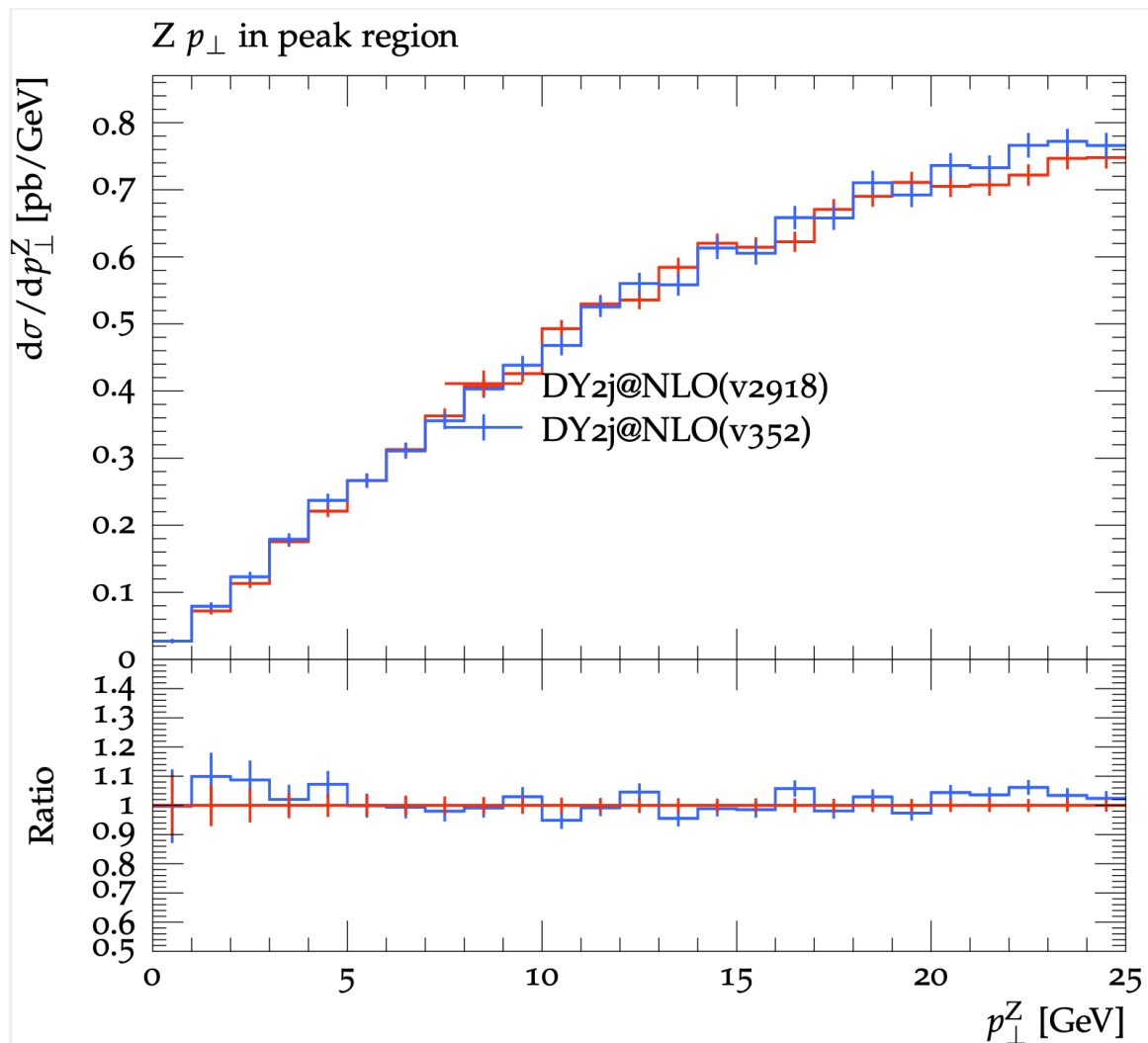

DY+2jet Xsec: MG2918 vs MG352

	Xsec (DY+2j) [pb] (before matching)	Xsec (DY+2j) [pb] (after matching)	Matching eff.
MG2918	1605.00 +/- 6.40	345.57 +/- 1.42	21.53%
MG352	1783.00 +/- 12.36	362.84 +/- 2.54	20.35%

DY+2jet: MG2918 vs MG352



DY+2jet: MG2918 vs MG352



DY+2jet error message

- The error messages are also in the directory "genVal/error_message" of my repository: <https://gitlab.cern.ch/bolin/genVal.git>
- The error messages in the subdirectory "lxplus" are generated via lxplus, while that in "cmsconnect" directory are generated via cmsconnect.

Thank you