EW Corrections on photon Spectra

I tested three different cases:
1) I considered the processes

```
generate xd~ xd > w+ w−
add process xd~ xd > w+ w− z
add process xd~ xd > w+ w− z z
```

2) Investigated the effect of the cuts on photons pT/ Energy

```
generate xd~ xd > w+ w−
add process xd~ xd > w+ w− a
```

3) Added the Higgs correction

```
generate xd~ xd > w+ w−
define X = w+ w− h z
add process xd~ xd > w+ w− X
```

EW Corrections on photon Spectra

1) Additional radiated Z bosons

```
generate xd~ xd > w+ w−
add process xd~ xd > w+ w− z
add process xd~ xd > w+ w− z z
```
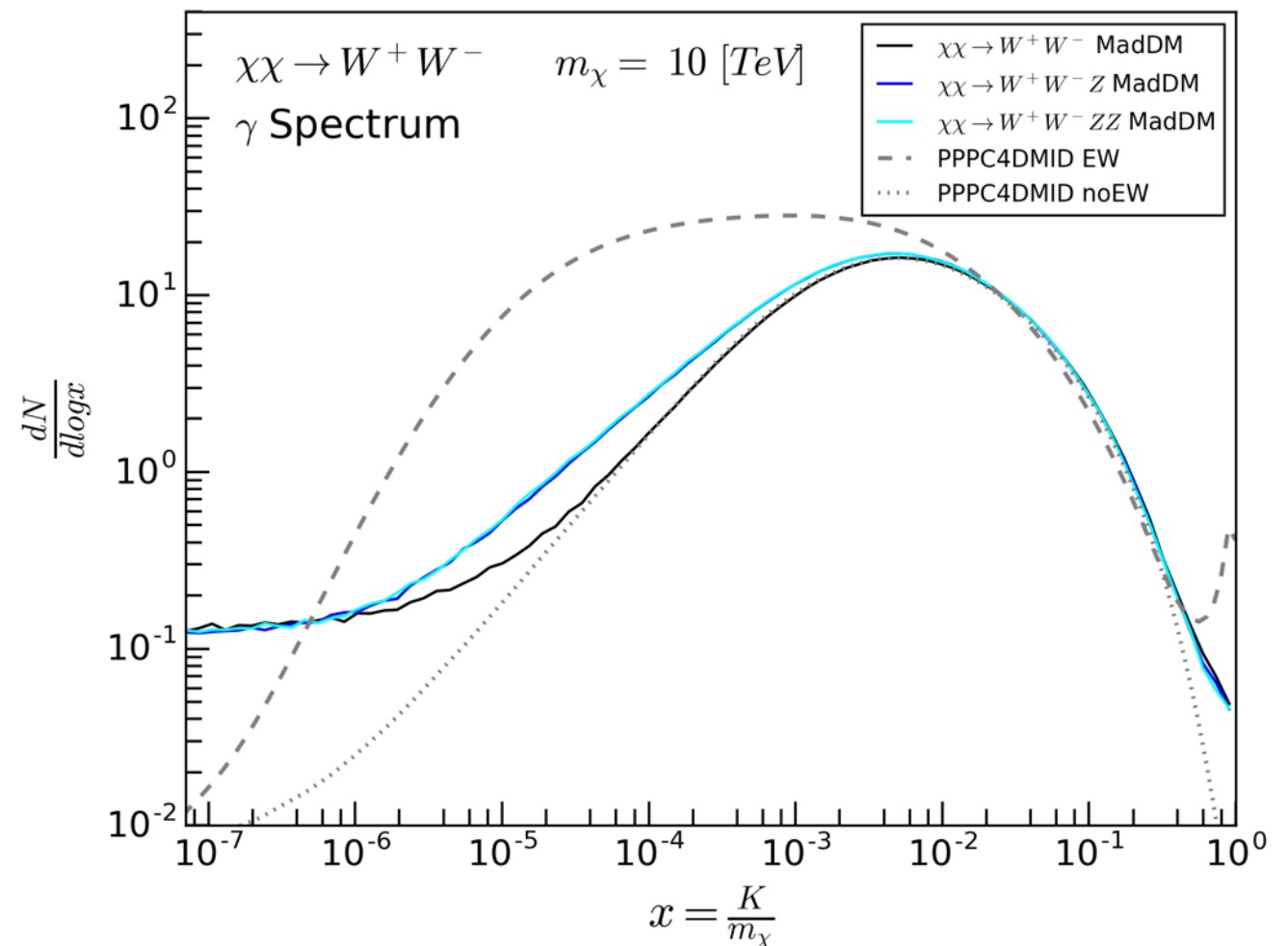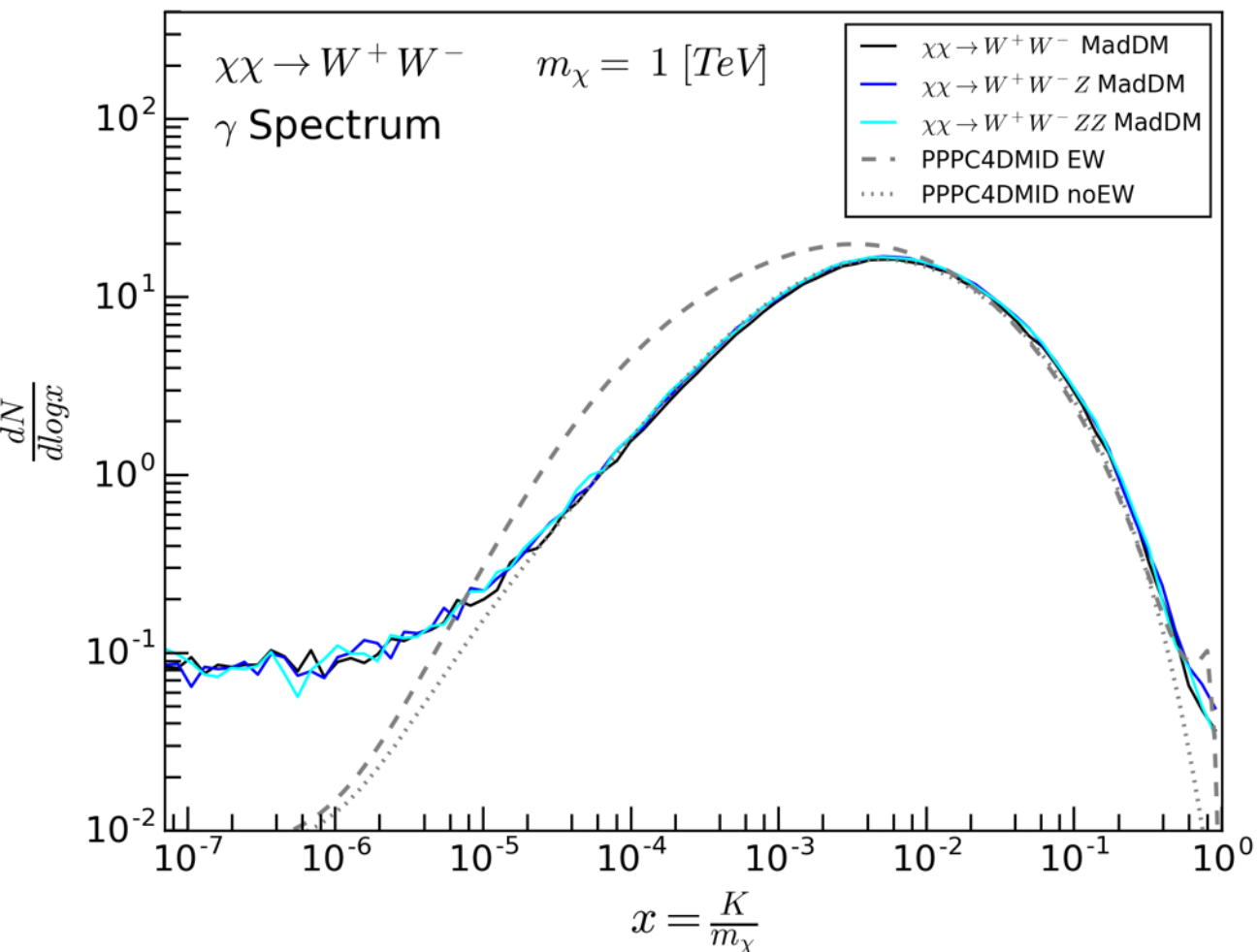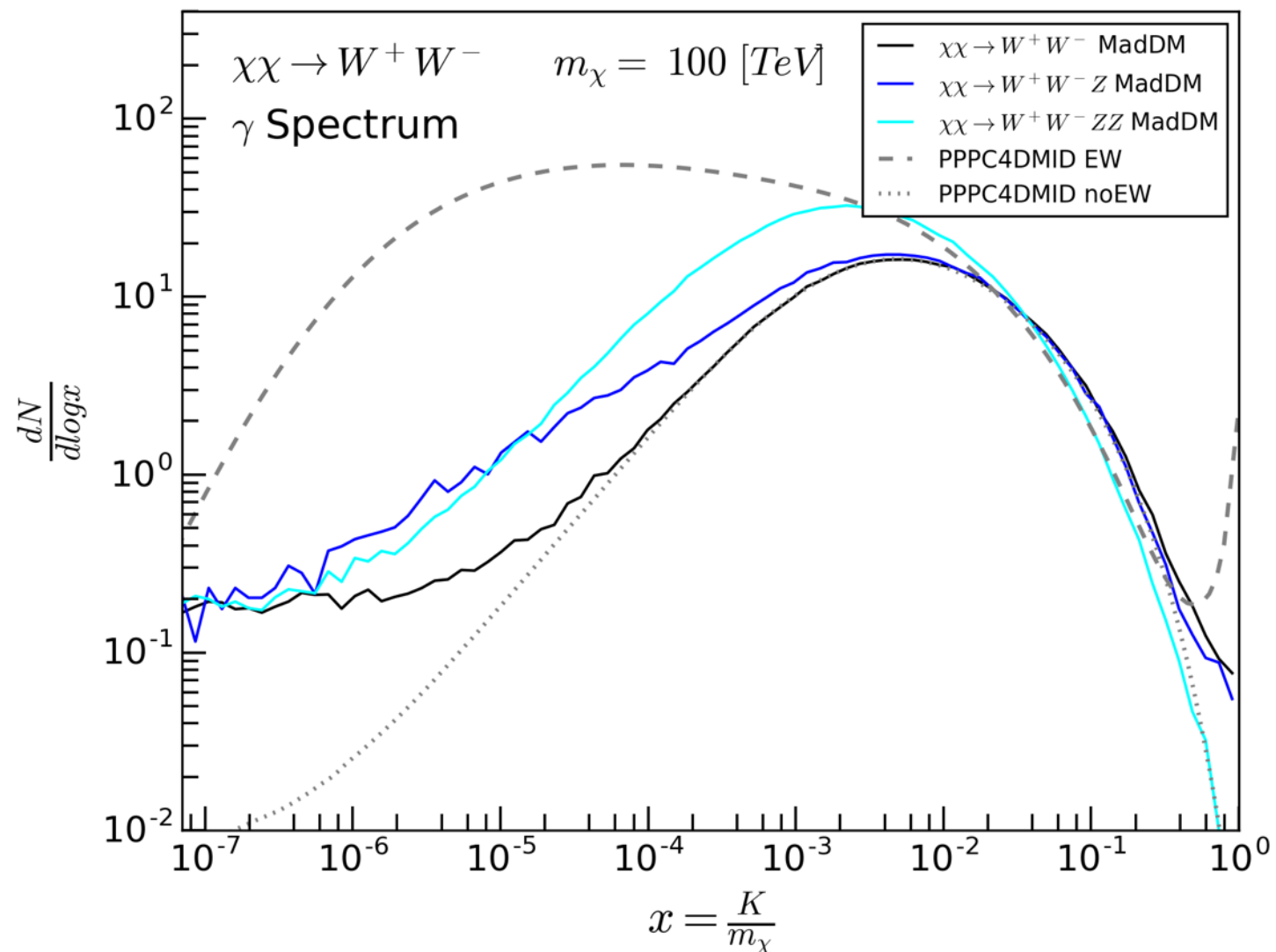
EW Corrections on photon Spectra

1) Additional radiated Z bosons

```
generate xd~ xd > w+ w-
add process xd~ xd > w+ w- z
add process xd~ xd > w+ w- z z
```
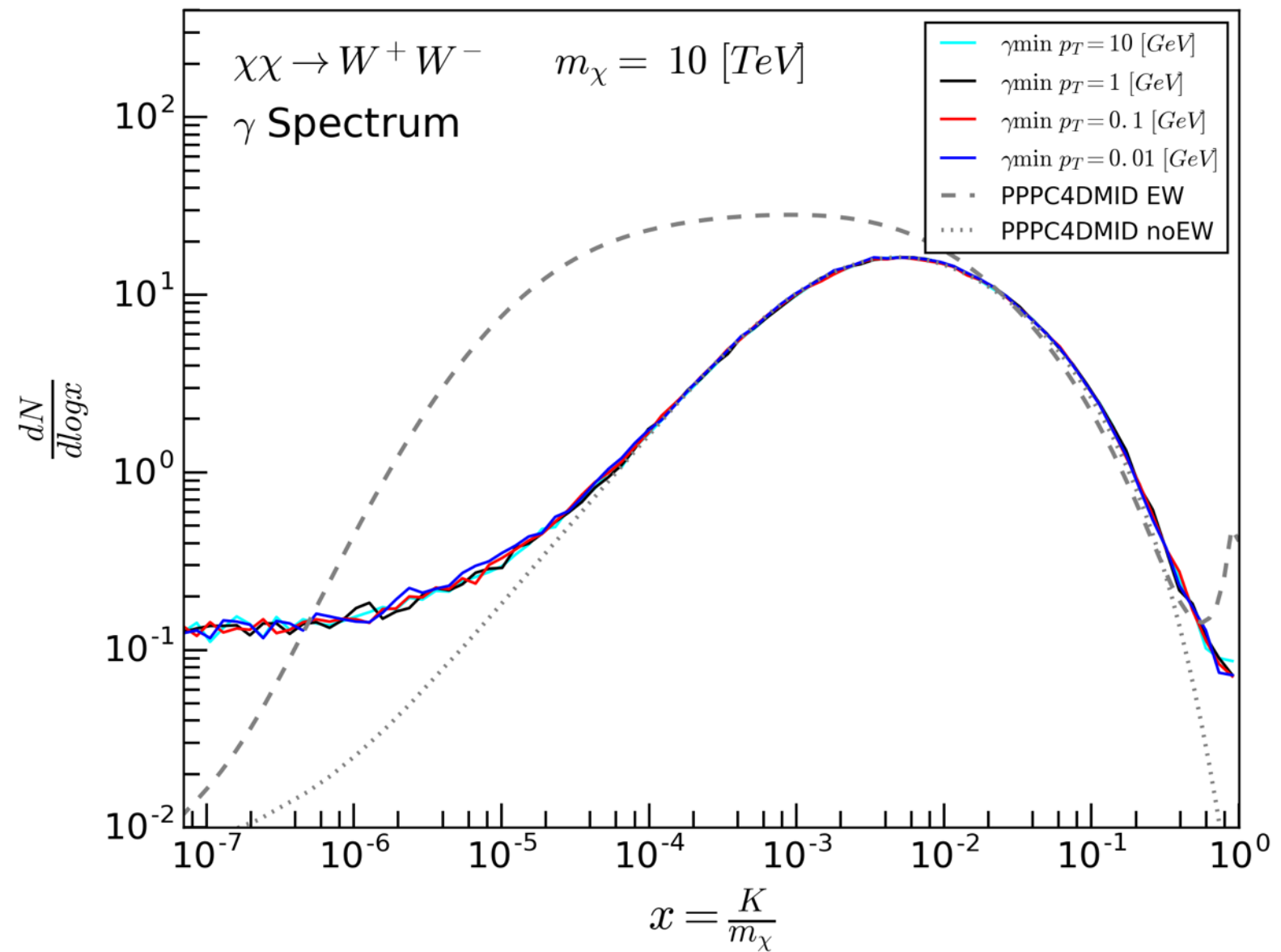
EW Corrections on photon Spectra

2) Photon pT / photon Energy Cuts

```
generate xd~ xd > w+ w−
add process xd~ xd > w+ w− a

XXX  = pta          ! minimum pt for the photons
```
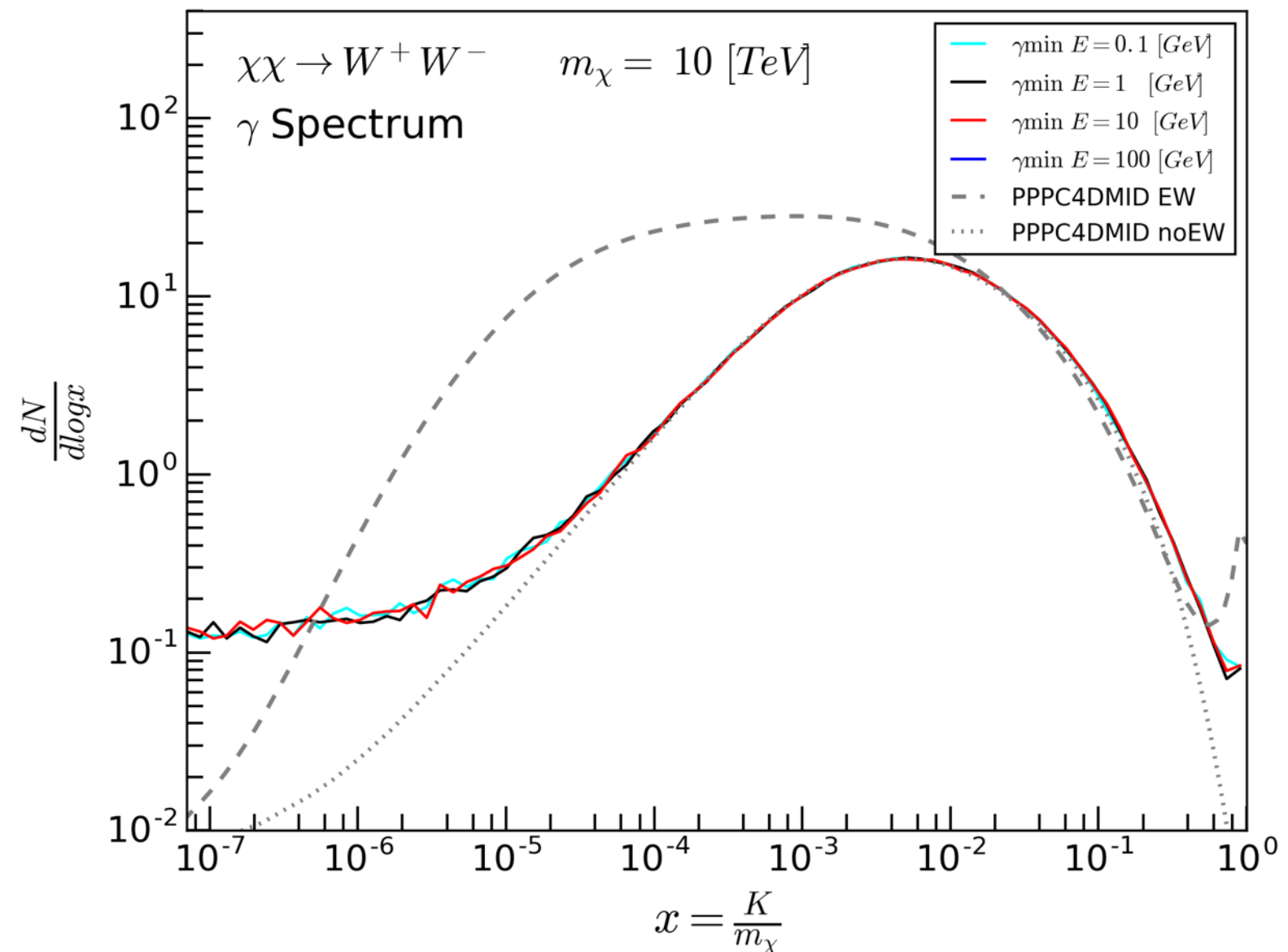
EW Corrections on photon Spectra

2) Photon pT / photon Energy Cuts

```
generate xd~ xd > w+ w-
add process xd~ xd > w+ w- a

XXX  = ea        ! minimum E for the photons
```
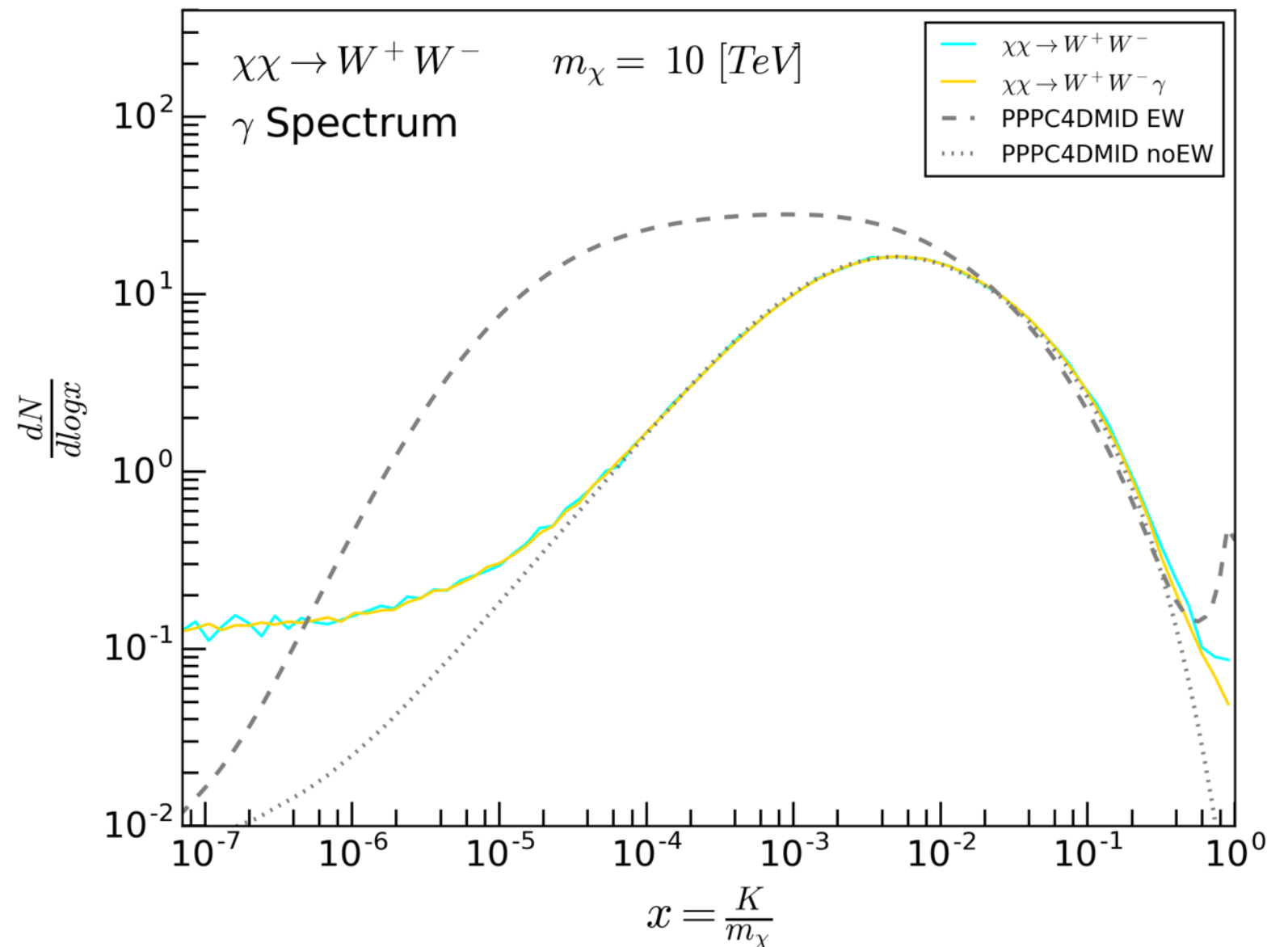
no difference at all?

EW Corrections on photon Spectra

2) Photon pT / photon Energy Cuts

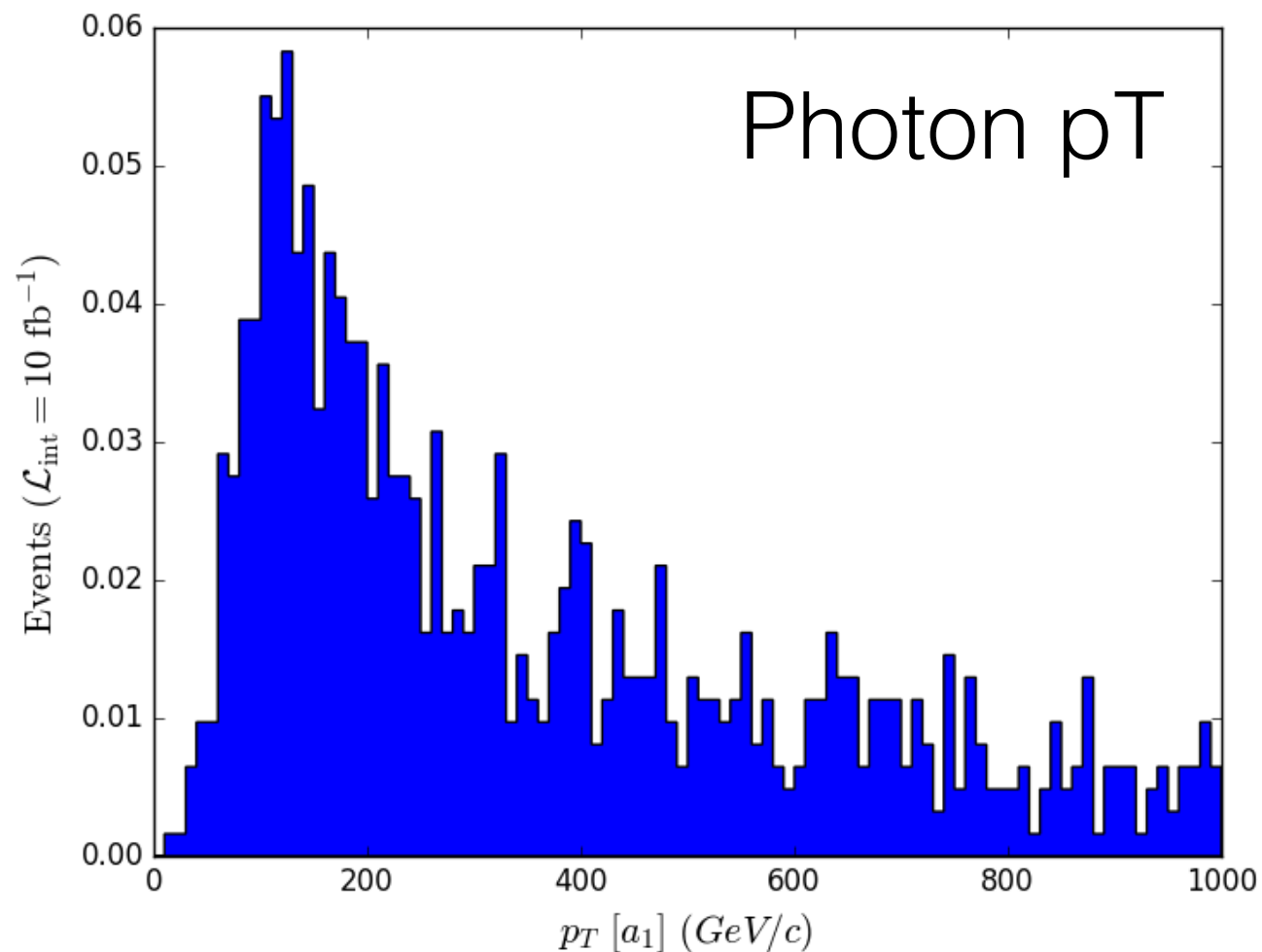```
generate xd~ xd > w+ w-
add process xd~ xd > w+ w- a

10 = pta   ! minimum pt for the photons
(default)
```
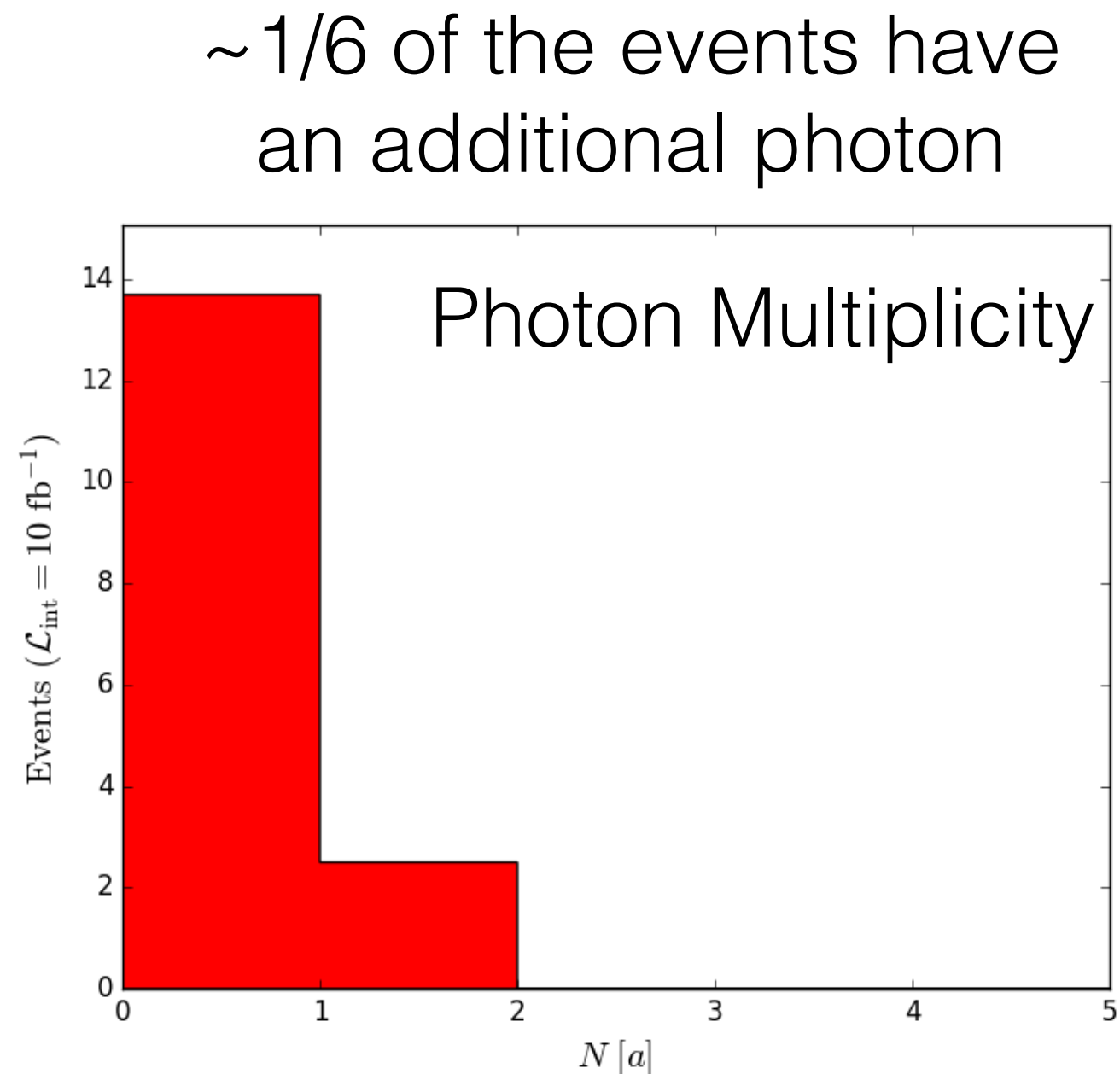
**no difference at all?**

# EW Corrections on photon Spectra

## 2) Photon pT / photon Energy Cuts



Photon pT

The Photons have very high pt so for 'standard' cuts it makes no difference ?

~1/6 of the events have an additional photon



Photon Multiplicity
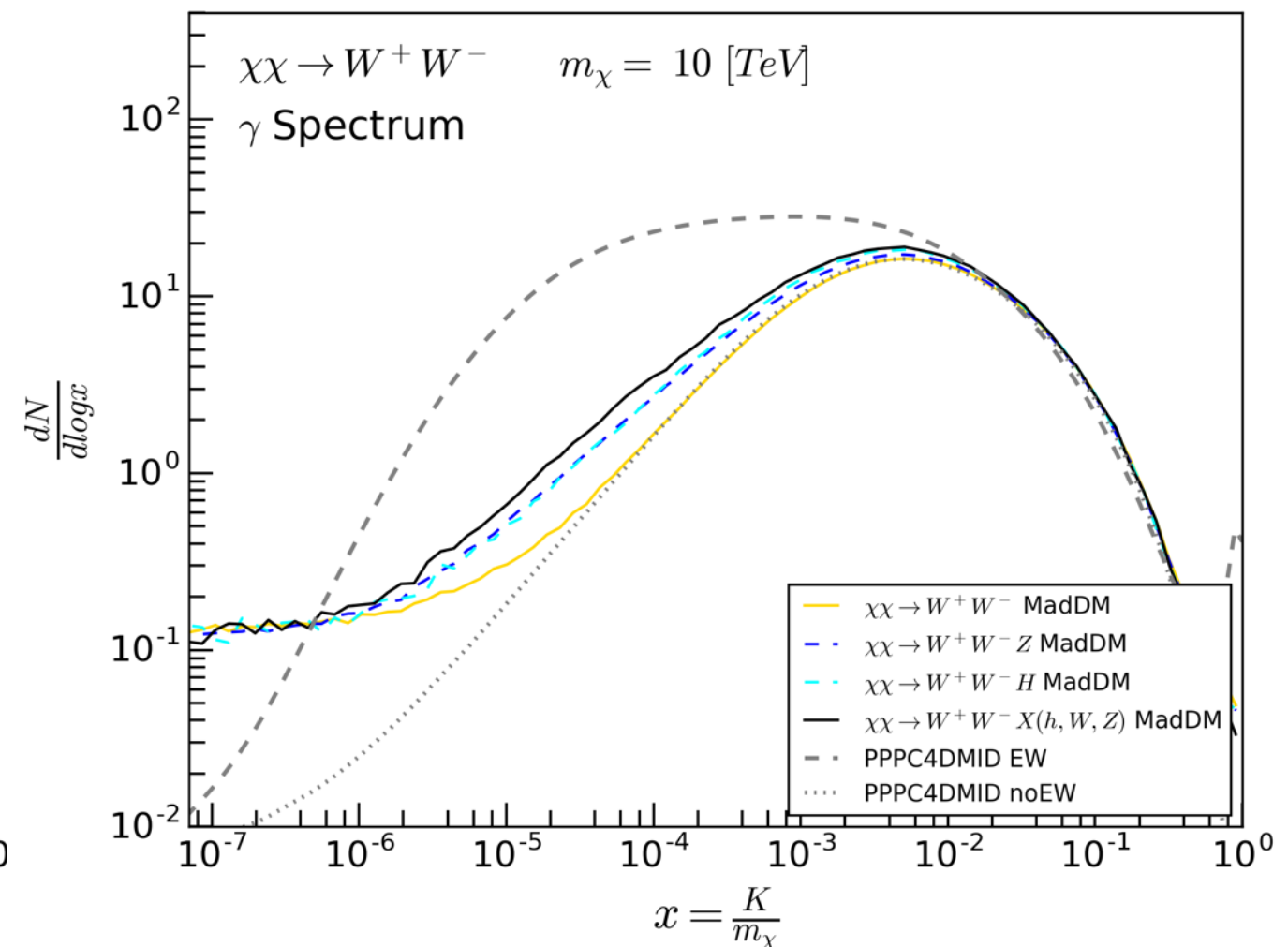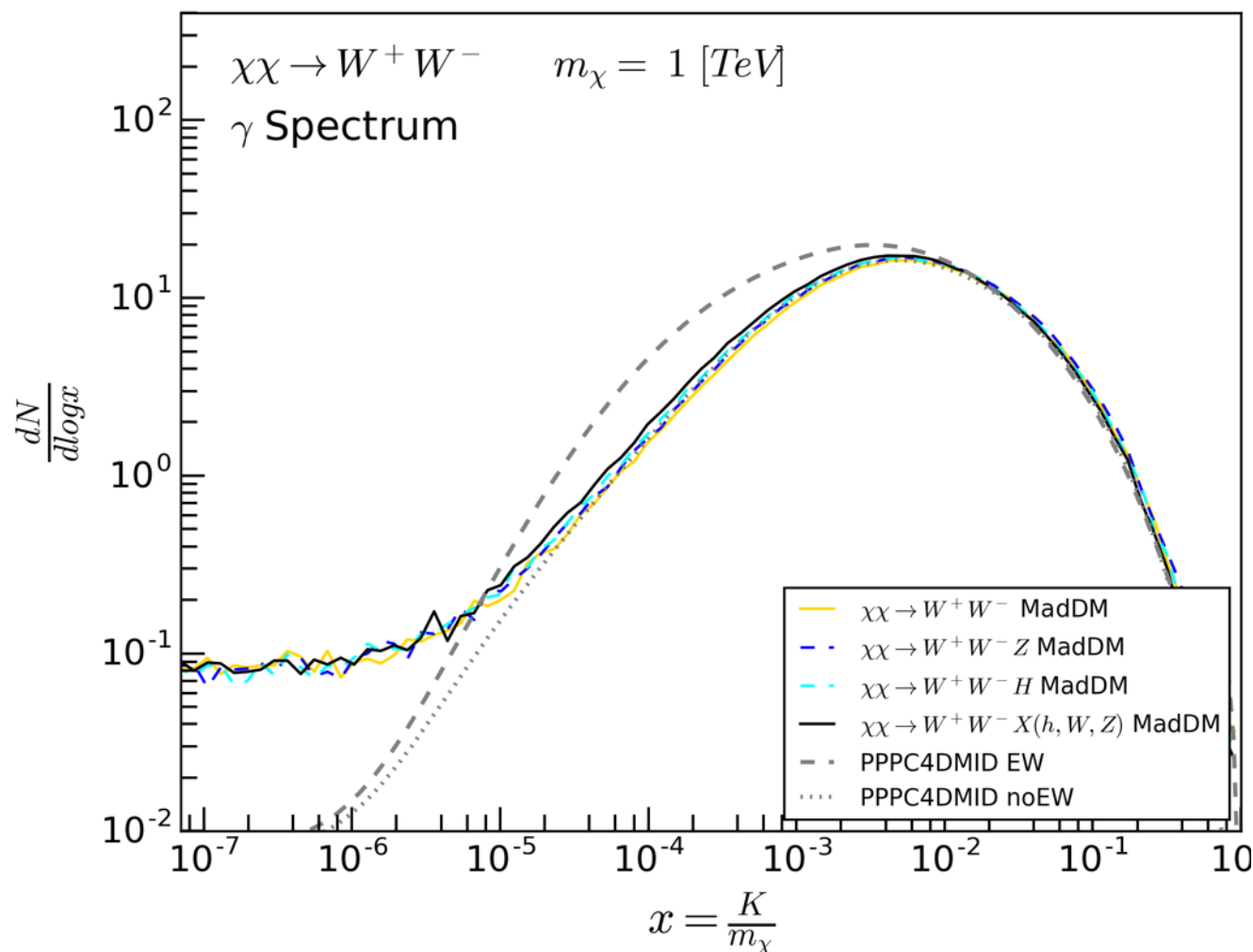
# EW Corrections on photon Spectra

## 3) Higgs Corrections
I added also the Higgs contributions to the Zs

```
generate xd~ xd > w+ w−
define X = w+ w− h z
add process xd~ xd > w+ w− X
```

EW Corrections on photon Spectra

3) Higgs Corrections

```
generate xd~ xd > w+ w-
define X = w+ w- h z
add process xd~ xd > w+ w- X
```