

# Section 4: t-channel dark matter signals at hadron colliders

Focus on simplified models

Full models are covered  
In Section 8

1<sup>st</sup> gen.

2<sup>nd</sup> gen.  
(Sect. 5)

3<sup>rd</sup> gen.  
(Sect. 8)

Generic couplings

Universal

**NEW!**



Impact of signal modelling

(Sect. 2)

**LO vs. NLO**

- Kinematics
- Yields

**Role of**

**different channels**

(XX, XY, YY, YY\*, Y\*Y\*)

- PDF enhancement
- interference

Going to experiment

- Which final states (new SRs?)
- Recasting experimental searches
- Can bounds be improved? (Run 3, HL-LHC, ...)
- Non-avoidable bound: YY-QCD (YY- $\gamma$  leptophilic?)

Interplay with cosmology

(Sect. 3)

Bounds from relic, DD, ID...