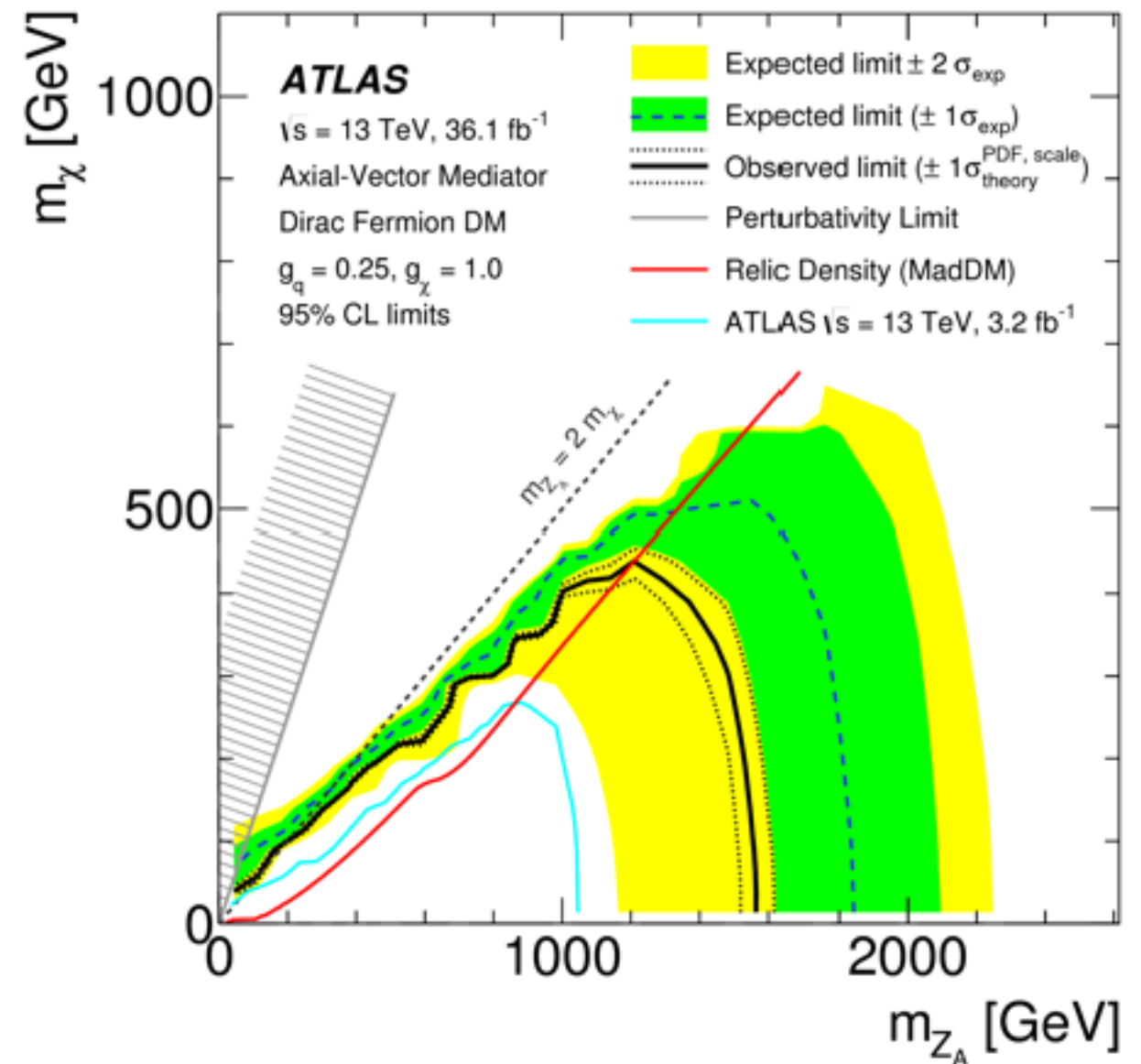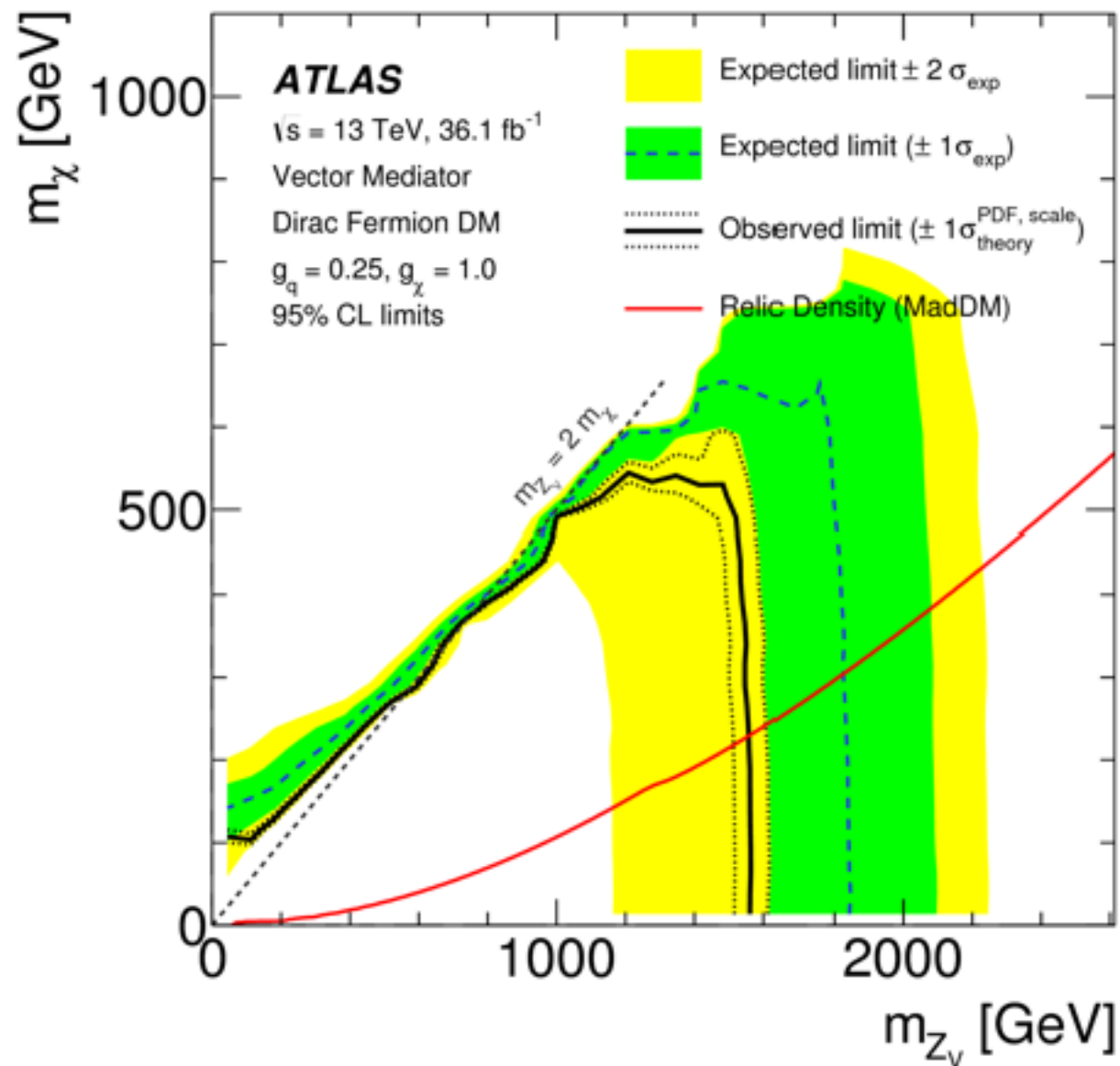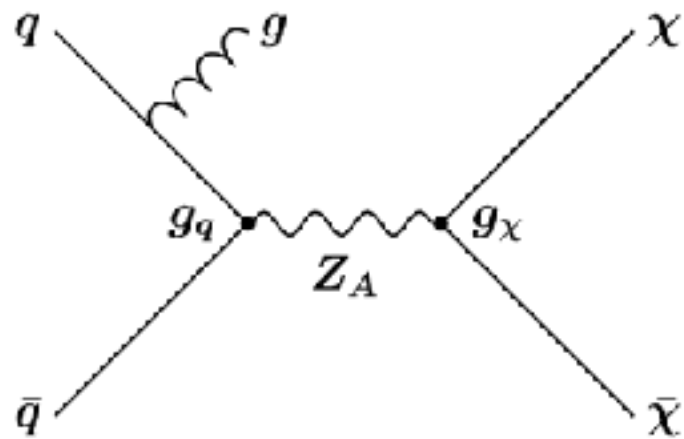# Ultimate goal by the end of the school

To reproduce

Search for dark matter and other new phenomena in events with an energetic jet and large missing transverse momentum using the ATLAS detector

arXiv: 1711.03301

Today's goal: make your own DM UFO model

$$\mathcal{L} = \bar{\chi}\gamma_\mu(g^V_\chi + g^A_\chi \gamma_5)\chi Z^\mu_A + \bar{q}\gamma_\mu(g^V_q + g^A_q \gamma_5)q Z^\mu_A$$

FeynRules

1. Warm up: follow SM.nb, and generate the SM UFO.

2. cp -r SM YourModel

3. create yourmodel.fr, and LoadModel together with SM.fr.

4. check your model, and generate the UFO.

MG5aMC

1. cp -r YourUFO ~/MG5aMC/ models/YourUFO

2. ./bin/mg5_aMC

  ‣ import model YourUFO

  ‣ generate p p > …

  ‣ output

  ‣ launch