

Mono-Z(11)

A. Kasem – Physics department – Ain Shams Univ.

E. El-Khateeb – Physics department – Ain Shams Univ.

A. Abdelalim – CFP – Zewail City of Science and Technology.

Dark Matter Signals

Selecting the Z

OSSF lepton pair

$m_{ll} - m_z$ in $-15/+10$ GeV $\rightarrow \pm 15$ GeV

$p_{T,ll} > 60$ GeV

$\Delta R(ll) < 1.8$

Selecting the signal

$p_{T,miss} > 100$ GeV

$|p_{T,ll} / p_{T,miss} - 1| < 0.4$

$\Delta\phi(Z, MET) > 2.4 \rightarrow 2.6$

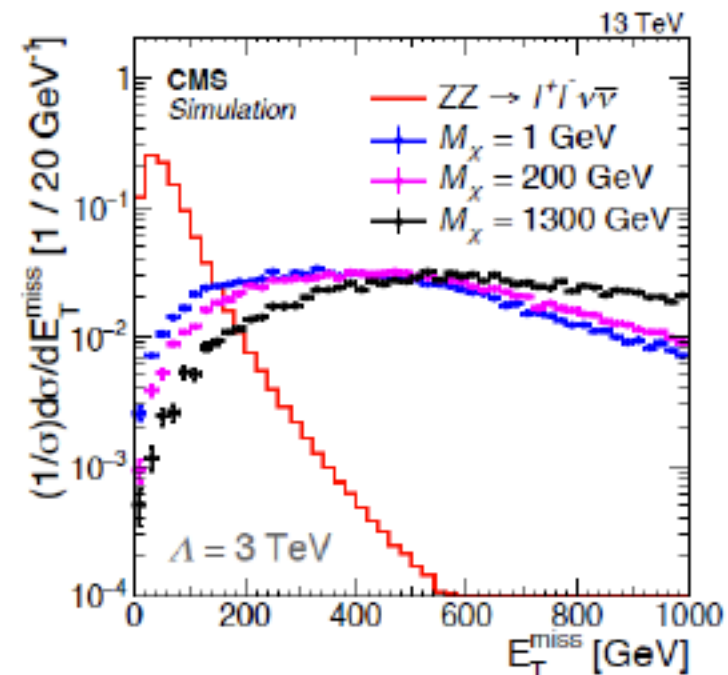
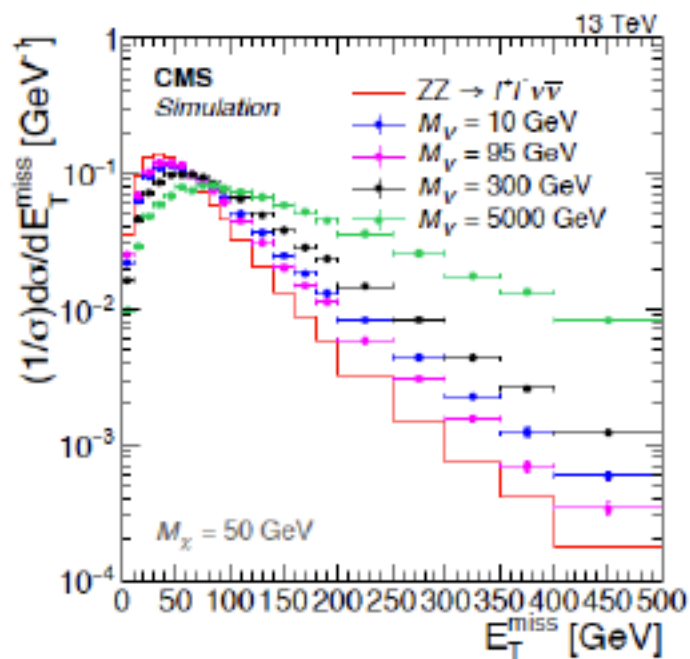
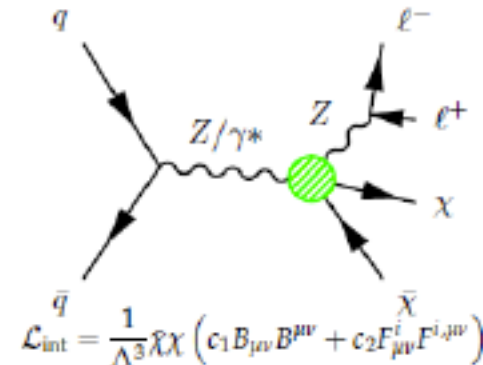
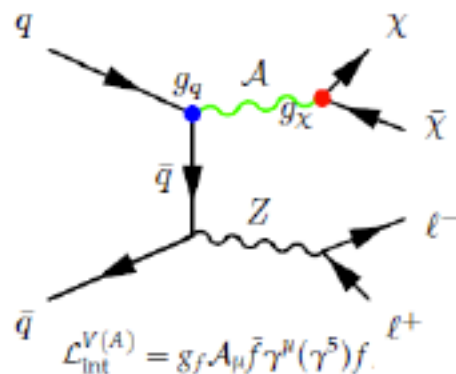
Killing the backgrounds:

No additional leptons (e, μ, τ_{had})

Maximum 1 jet ($p_T > 30$ GeV)

No b jets ($p_T > 20$ GeV)

$\Delta\phi(jet, p_{T,miss}) > 0.5$



Achievements

- **AN-2015/285** (*Search for dark matter, extra dimensions, and unparticles in $Z(ll)$ MET final state at 13 TeV*) with Physics Analysis summary **EXO-16-010** the Draft Final reading and submission for the paper to JHEP will be this month
- **AN-2016/199** (*Search for dark matter in $Z(ll)$ MET final state using the 2016 dataset*) with Physics Analysis summary **EXO-16-038**
- 3- we are working on third one right now