

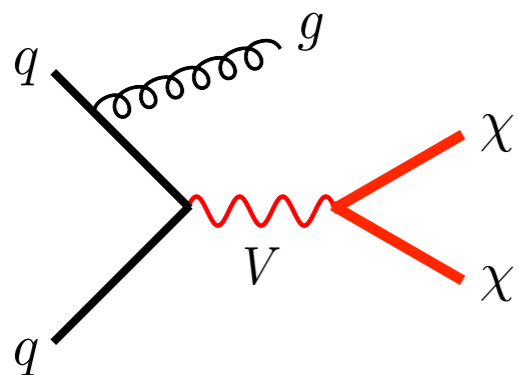
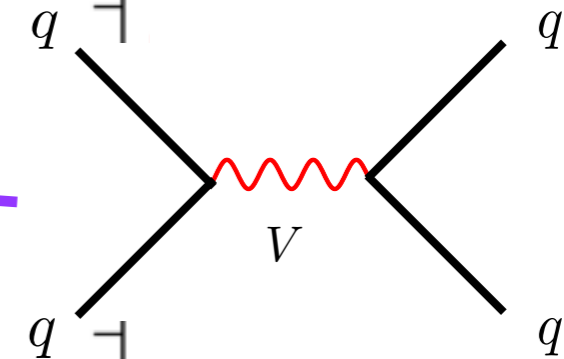
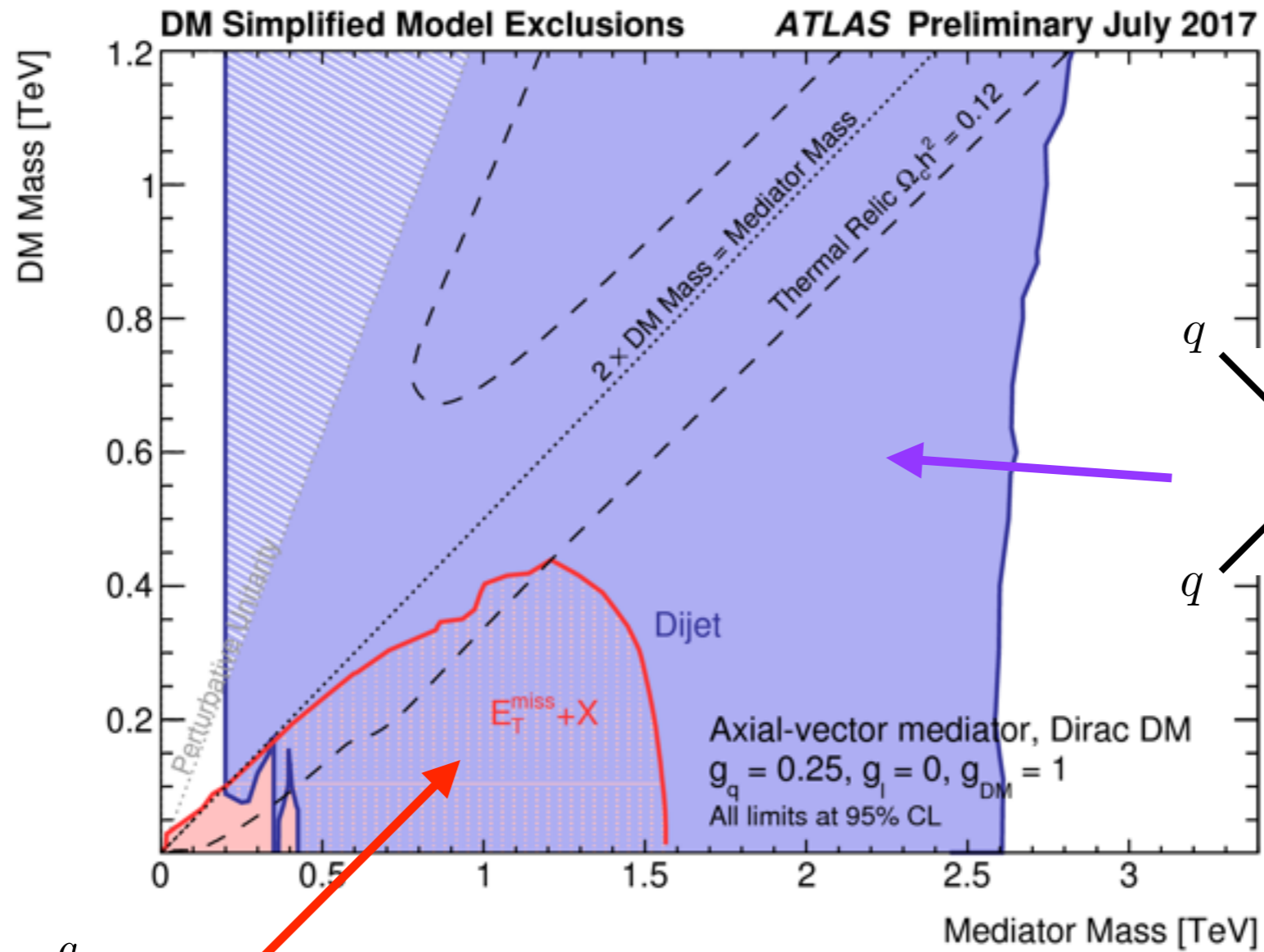
**C
O M
P L E
X C H A
N N E L S
: N O T A S
U M M A R Y !**

Uli Haisch,
DM@LHC 2018

“Mono-X is not a
discovery channel”

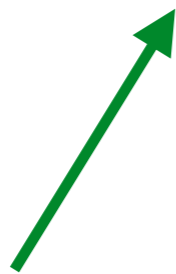
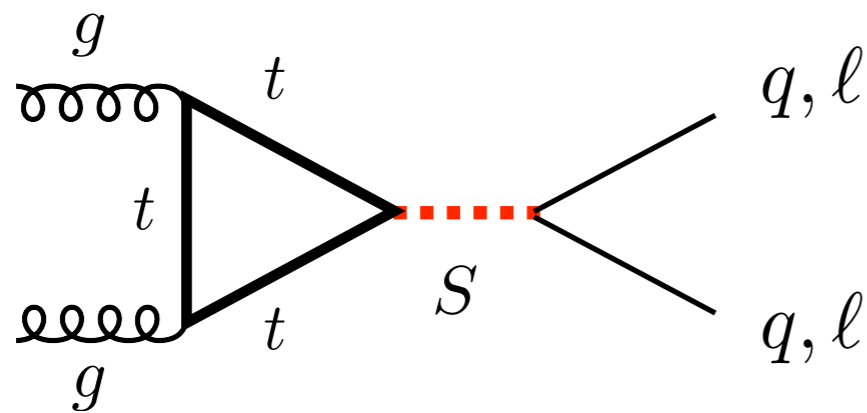
Zurek, 53rd Rencontres de Moriond - EW 2018

Plots like ...

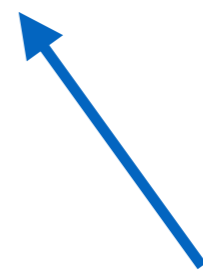
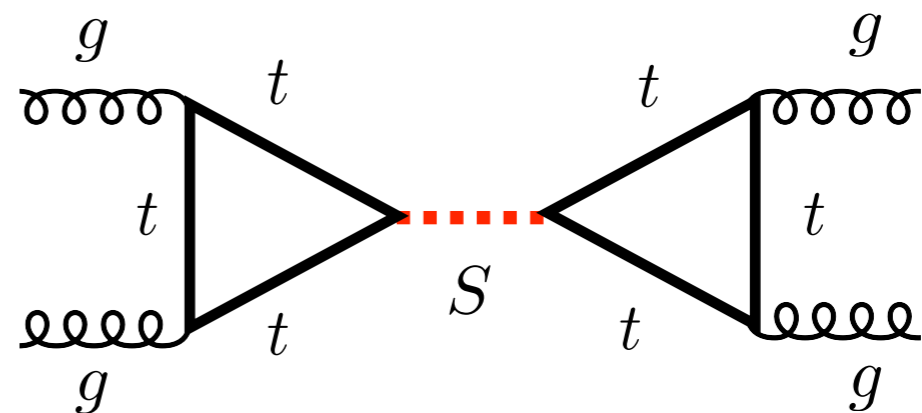


suggest this

Due to loop &/or Yukawa suppression dijet & dilepton searches provide essentially no constraint on spin-0 mediator models:

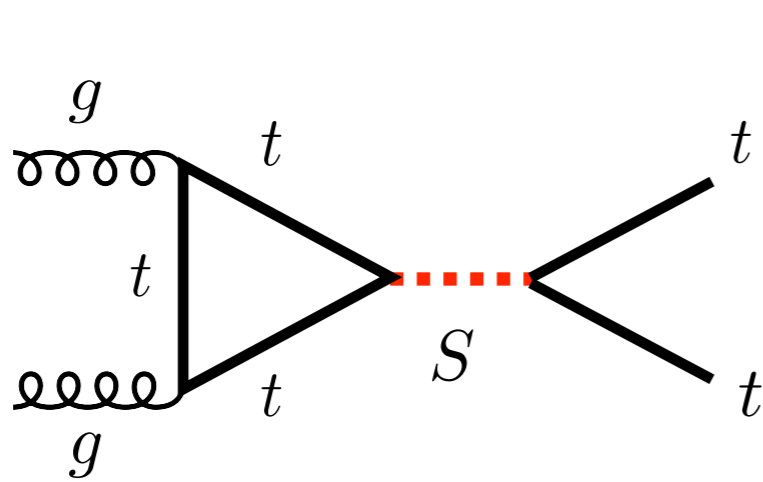


1-loop & Yukawa suppressed

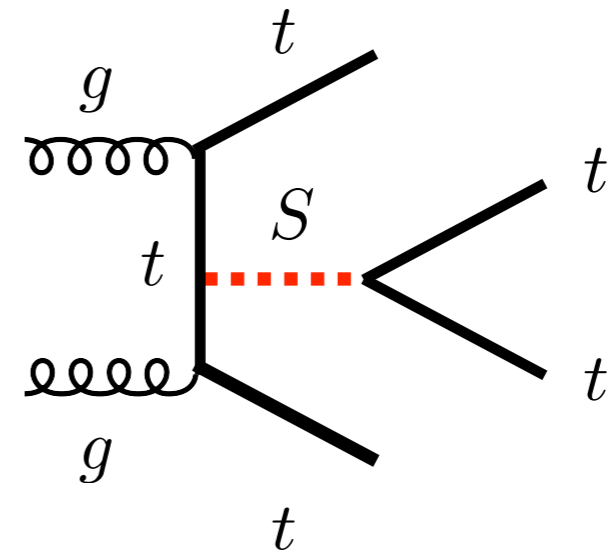


2-loop suppressed

In spin-0 models, role of dijet searches played by searches for top final states:



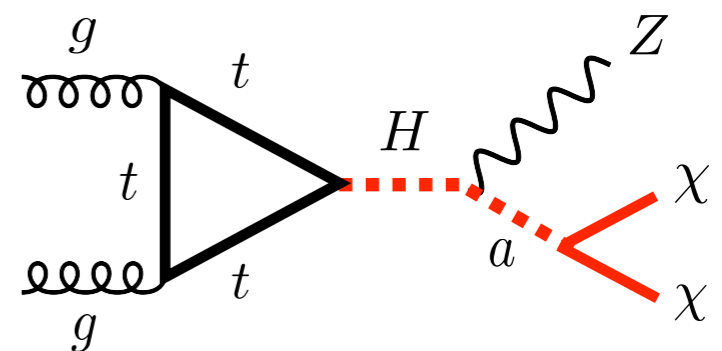
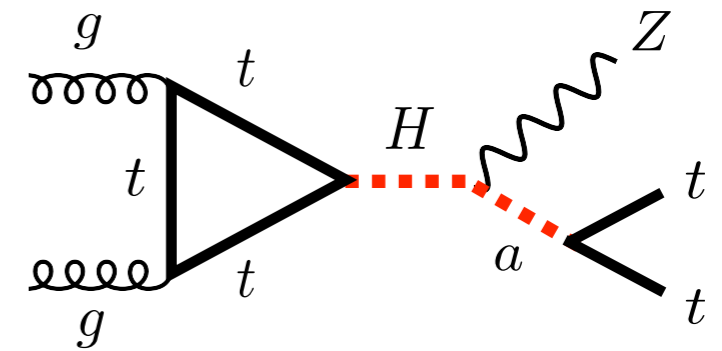
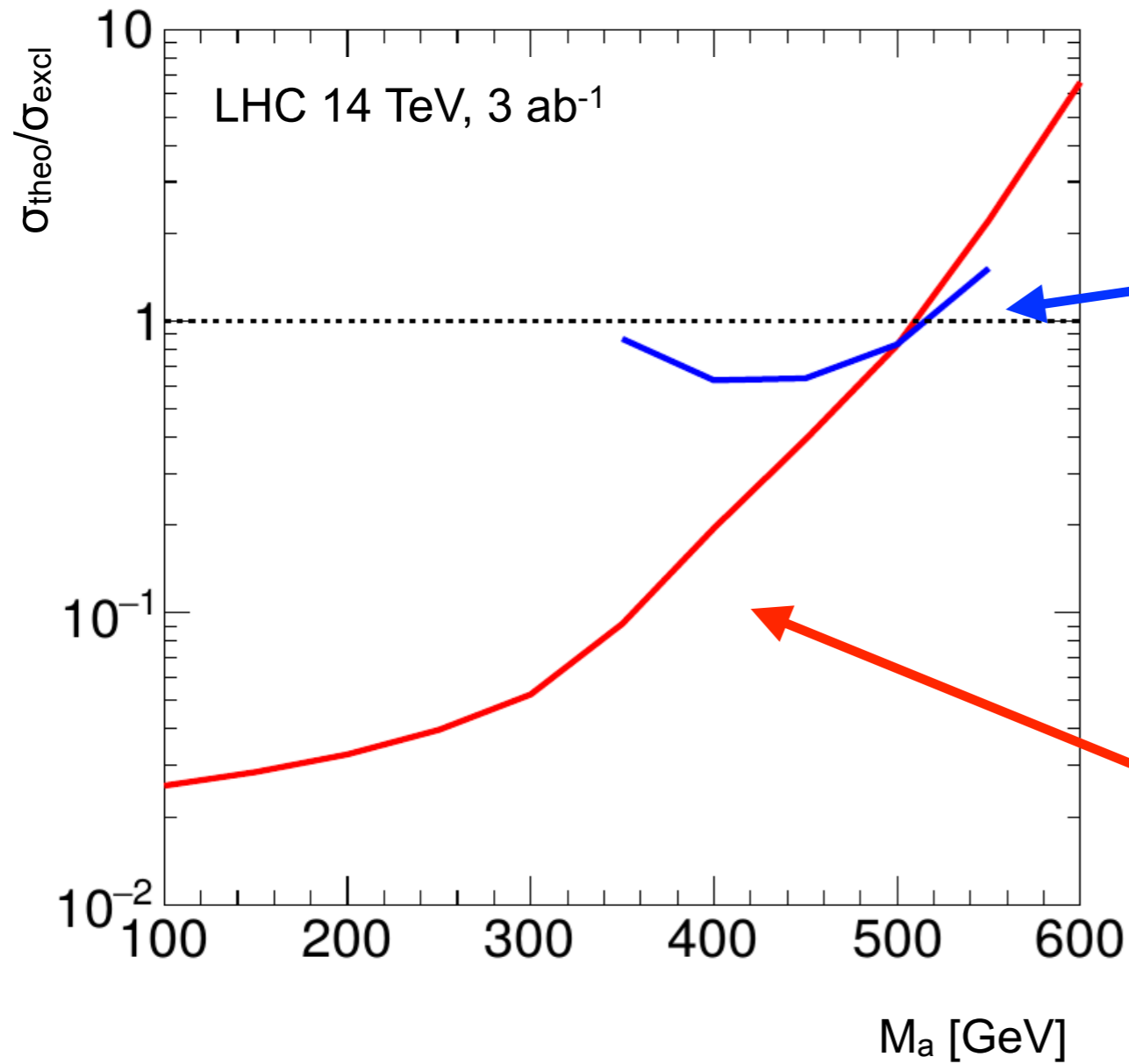
signal-background interference is an obstacle



small signal strength calls for lots of data & precise understanding of backgrounds

But there are more channels ...

2HDM+a, $\tan\beta=1$, $\sin\theta=0.7$, $M_{H,A,H^\pm}=800$ GeV



see backup slides of talk by Polesello

But there are more channels ...

More channels mean more opportunities for discovery. Should exploit all possible final states with & without MET to search for mediators between dark & visible side