

A model of electroweakly interacting non-abelian vector dark matter

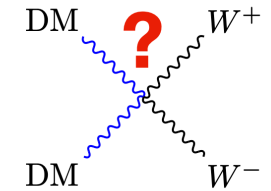
Motoko Fujiwara (Nagoya U.)

T. Abe, J. Hisano, K. Matsushita

[JHEP 07 (2020) 136], [arXiv: 2106.XXXXX]

Question:

What is the nature of electroweakly interacting spin-1 dark matter (DM)?



(1) Model building

$$SU(3)_c \otimes SU(2)_0 \otimes SU(2)_1 \otimes SU(2)_2 \otimes U(1)_Y \rightarrow$$

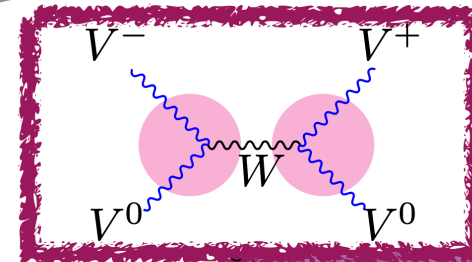
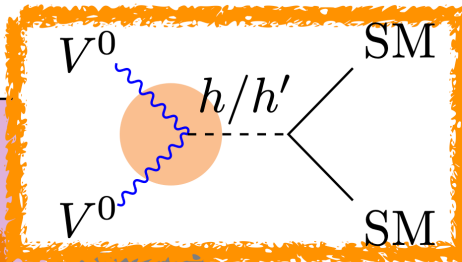
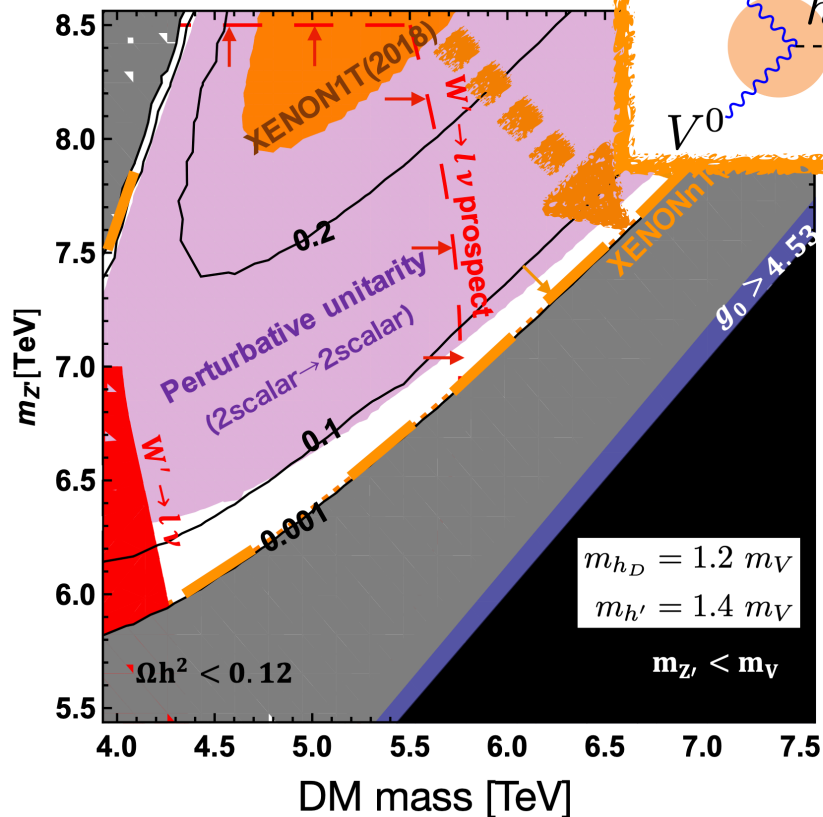
Exchange Symmetry

Z₂-odd spin-1 DM w/ EW int.

Features?

$V^0 \quad V^\pm \simeq SU(2)_L$ triplet

(2) Phenomenology

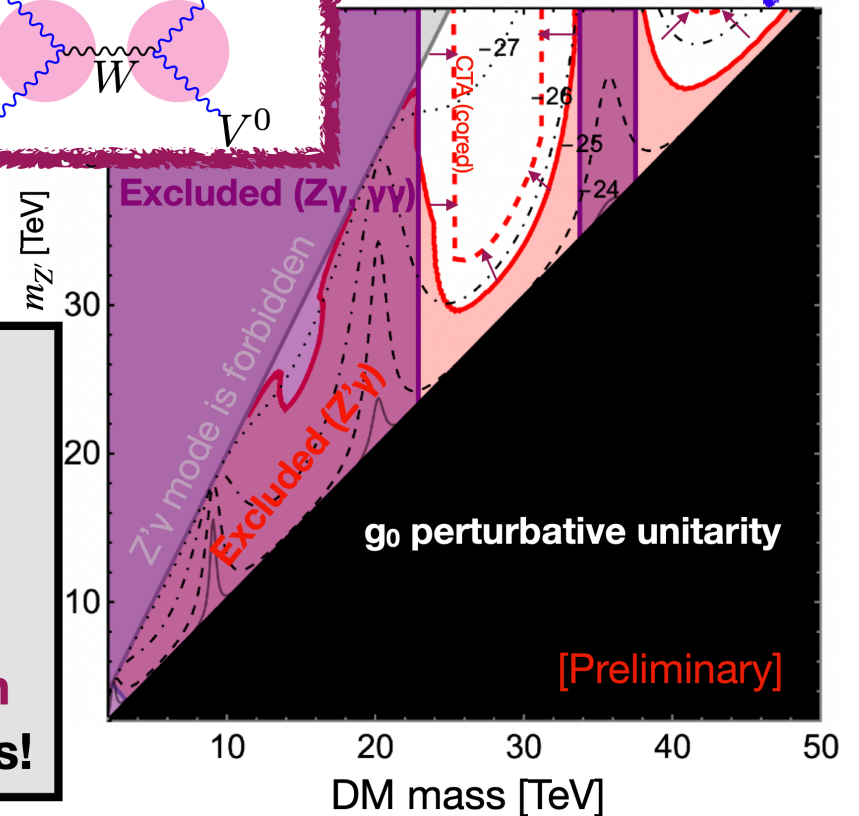


Sommerfeld enhancement

Answer:

- Higgs coupling
- Plenty EW channels

Direct detection
Line γ -ray search
are good probes!



[Preliminary]