

Dark Matter Direct Detection in t-channel mediator models

David Cabo-Almeida

JCAP 02 (2024) 005

In collaboration with: Giorgio Arcadi, Federico Mescia, Javier Virto

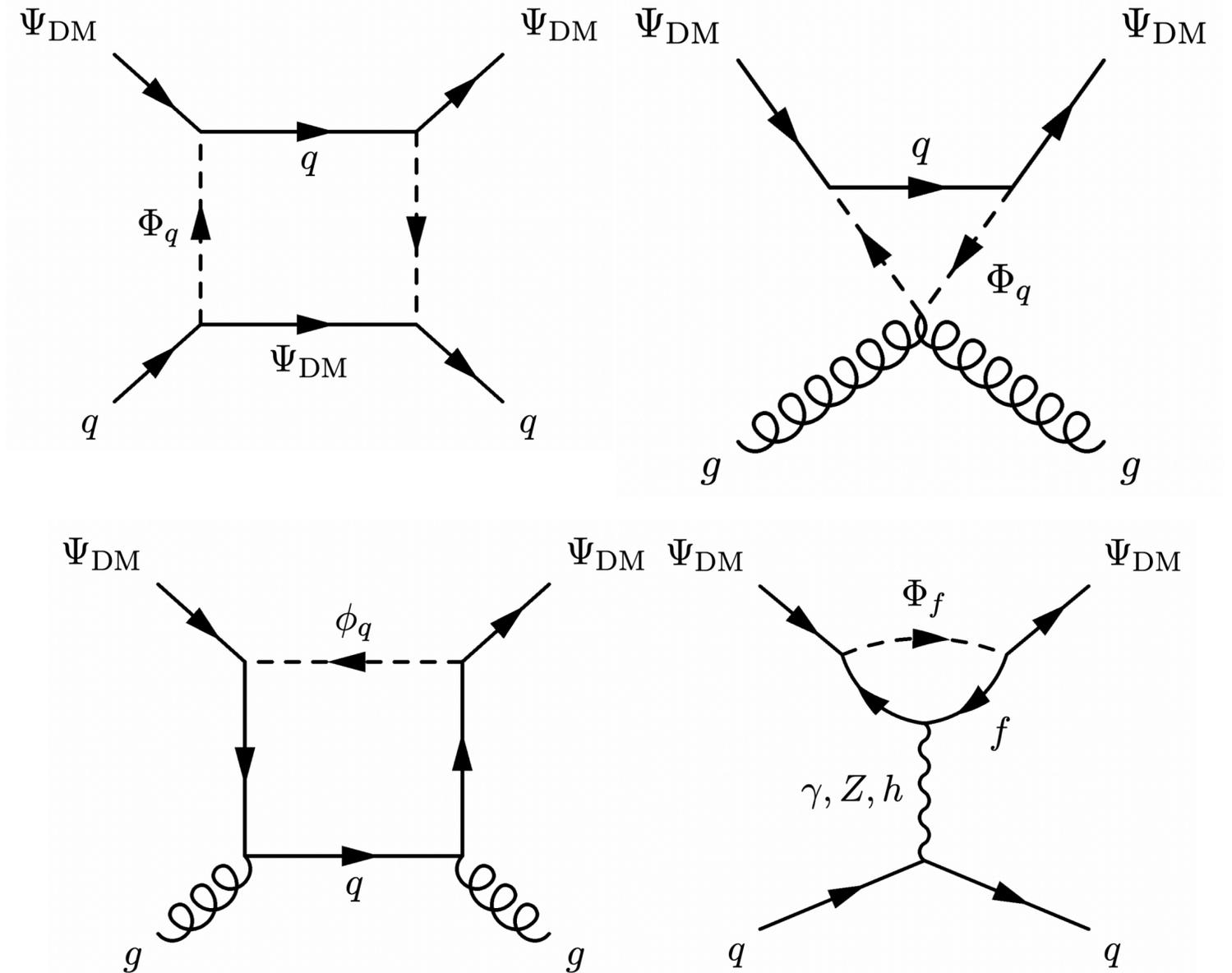
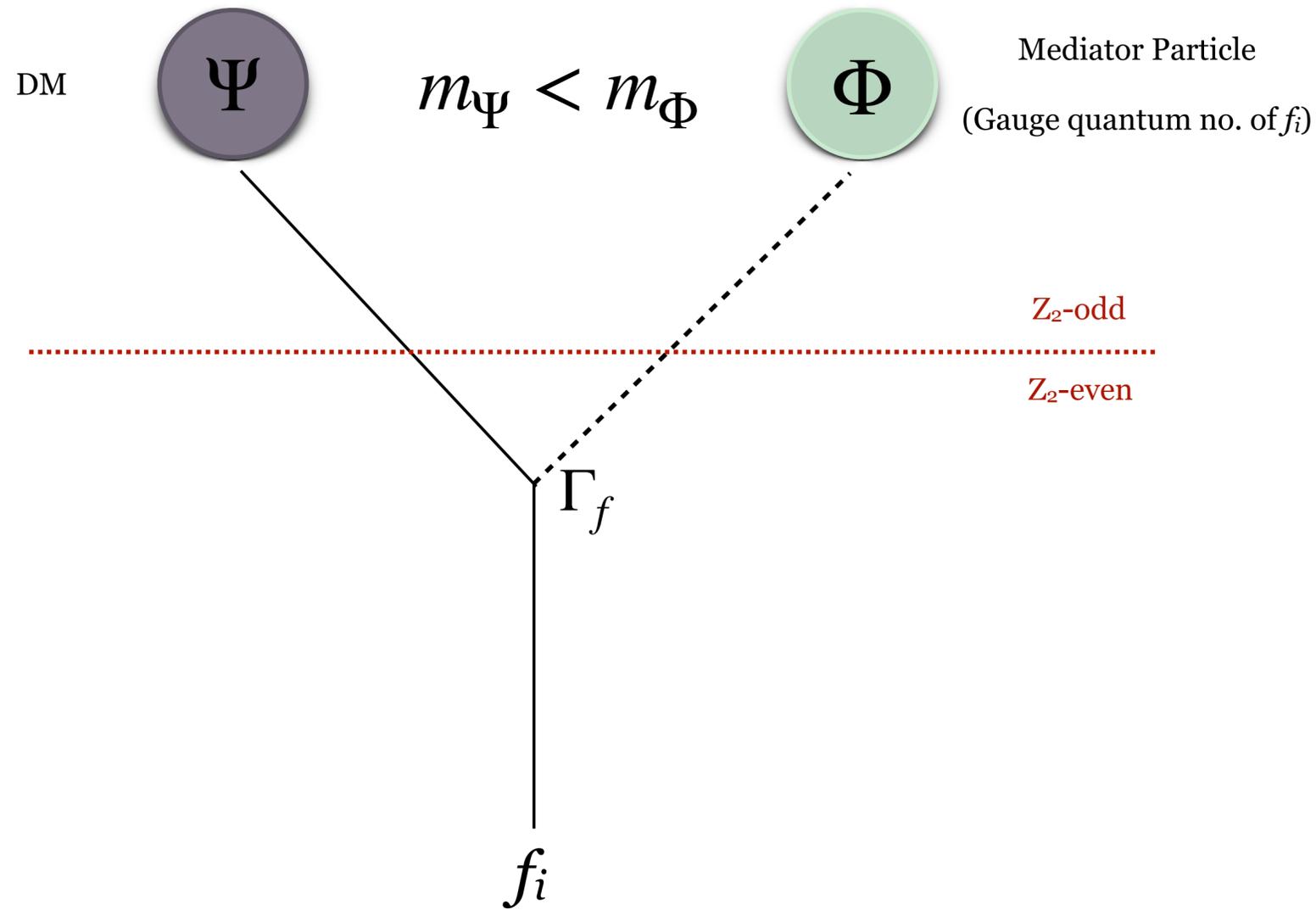


Università
degli Studi di
Messina



UNIVERSITAT DE
BARCELONA

T-channel mediator Dark Matter

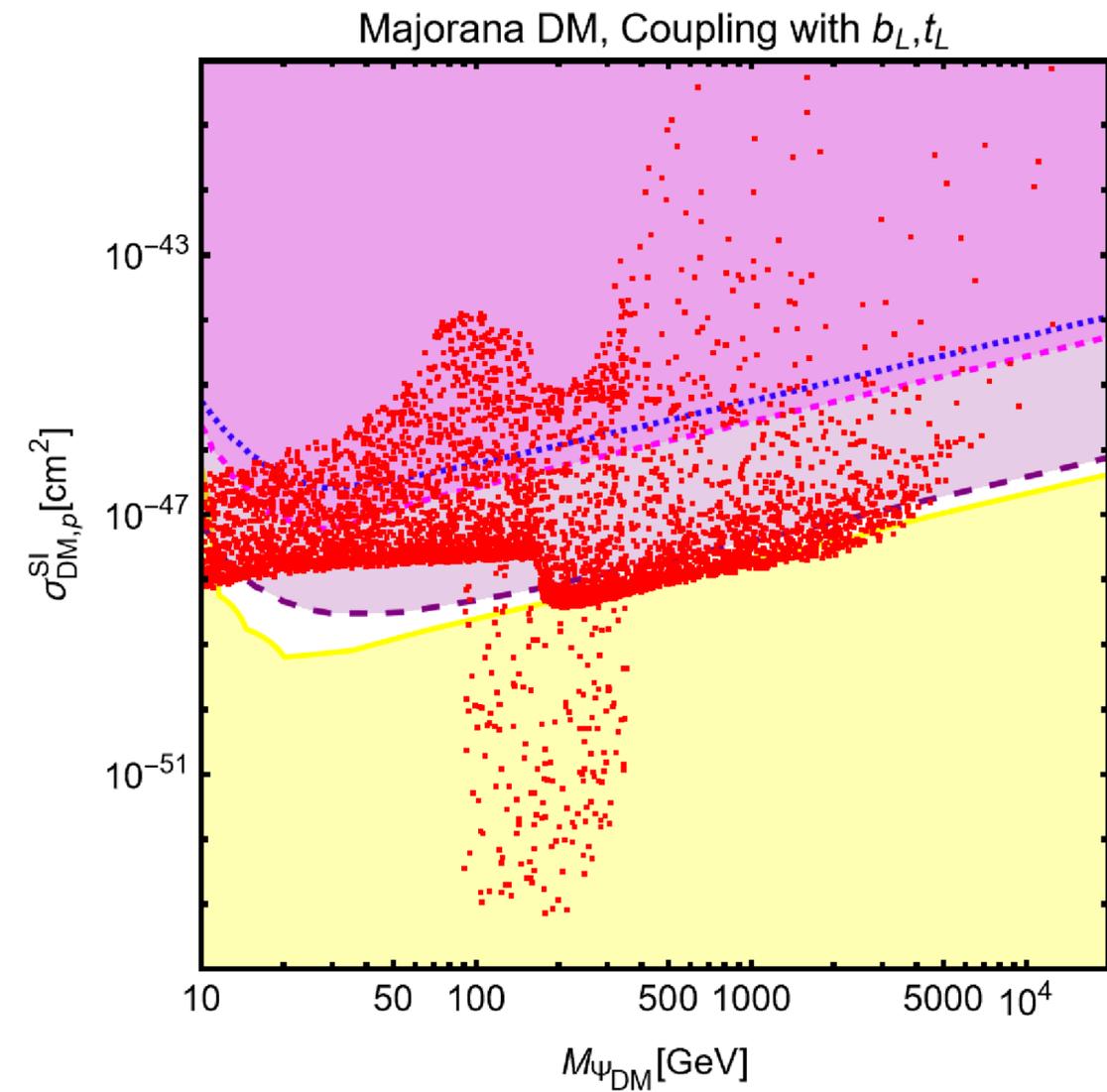
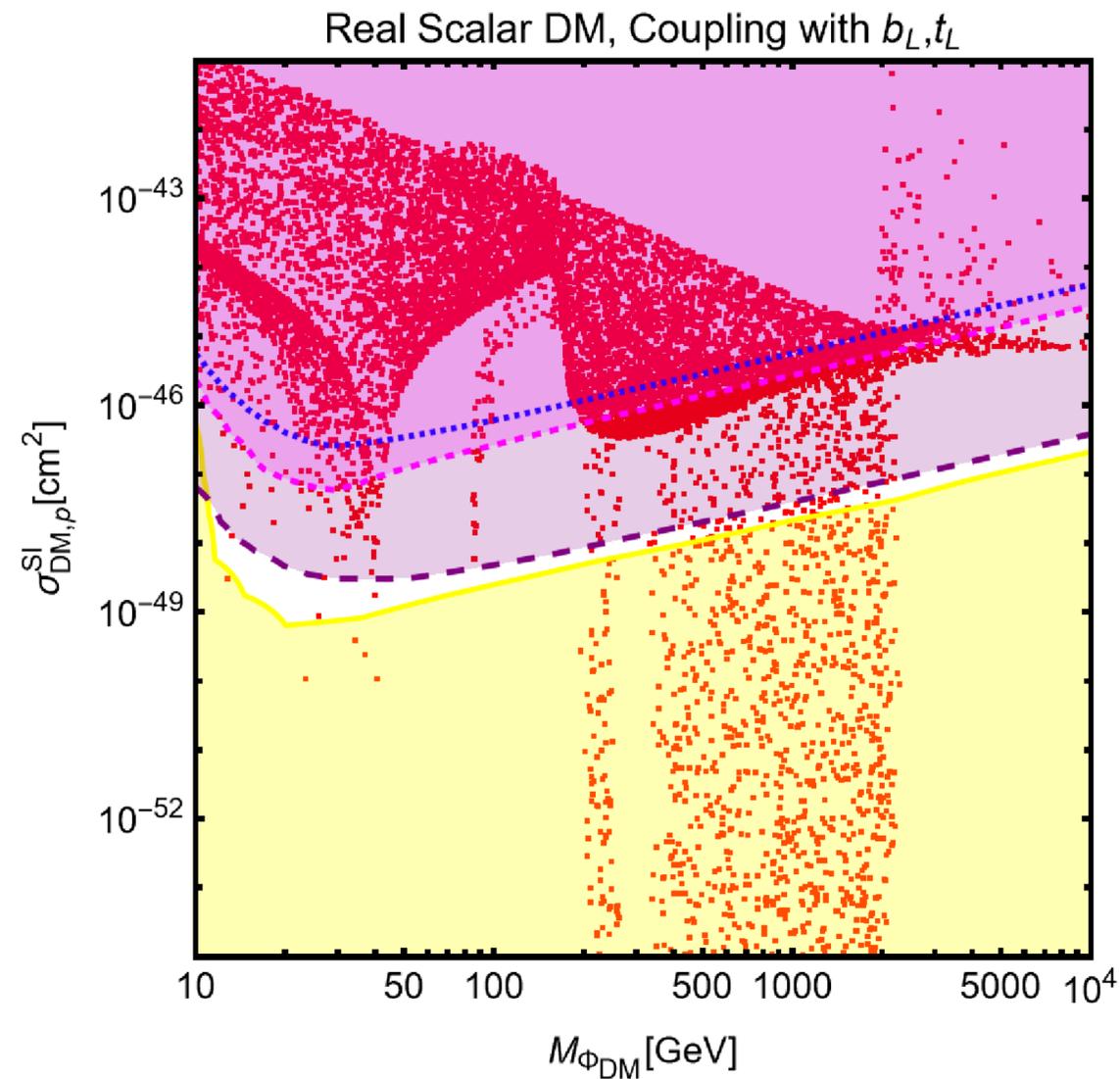


Results

$$M_{\Phi_{\text{DM}}, \Psi_{\text{DM}}} \in [10, 10^5] \text{ GeV}$$

$$M_{\Phi_f, \Psi_f} \in [100, 10^5] \text{ GeV}$$

$$\Gamma_{L,R}^f \in [10^{-3}, \sqrt{4\pi}]$$



Summary

- Complete matching for both scalars and fermion DM candidates to DD EFT Lagrangian
- Real DM weaker DD constrains but very suppressed annihilation cross-section which also strongly constrain the candidate.
- Majorana DM results the most favoured among the ones considered in this work and the only allowing for viable masses of order or below 100 GeV
- See the poster for Complex and Dirac scenarios.