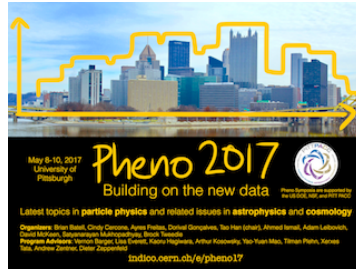


# Phenomenology 2017 Symposium



Contribution ID: 380

Type: parallel talk

## A flavon portal to dark matter

Monday 8 May 2017 18:00 (15 minutes)

Fermionic dark matter is added to the Froggatt-Nielsen mechanism, and conditions for freezeout identified. DM is charged under  $U(1)_{FN}$ , with the dominant annihilation channel a CP-even flavon + CP-odd flavon. When the DM-flavon coupling strength  $\sim$  the Cabibbo angle (0.23): (1) the DM mass is  $\mathcal{O}(100 \text{ GeV} - 1 \text{ TeV})$ , (2) perturbativity puts a lower and upper limits on the flavor scale, (3) DM is a secluded WIMP effectively hidden from collider and direct detection searches. Low-energy flavor experiments limiting the masses of dark matter and mediators constitute the best constraints on this scenario, while Fermi-LAT observations of dwarf galaxies, and collider searches for missing energy plus a single jet/bottom/top, are promising avenues for future discovery.

### Summary

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