

Probing **Dark Matter** via Neutron stars



Sakshi Gautam, Payaswinee Arvikar , Anagh Venneti,
Sarmistha Banik
INDIA

Two questions we set out to answer

1

Does HOW we impose astrophysical constraints — NICER, GW170817 complemented with chiral EFT & Heavy-ion collisions/Finite Nuclei constraints — change what we infer about dark matter?

2

Can current observations on NS tell fermionic dark matter apart from bosonic dark matter inside a neutron star?

***ONLY Gravitational Interaction between Hadronic Matter and Dark Sector:
TWO-FLUID APPROACH***

Our study depicts

Bayesian Analysis

Neutron Star
observables

Pulsar-pulsar
Correlations