

DD WG Friday:  
coming up

10:00	Jeremy Mock – Xenon Bubble Chambers for Direct Dark Matter Detection
10:15	Tien-Tien Yu – LDM detection using electron scattering in scintillators
10:30	Aaron Manalaysay – Towards the ultimate ionization threshold in semiconductor detectors
10:45	Lauren Hsu – Low Energy Nuclear Recoil Ionization Yield and SuperCDMS Sensitivity (k vs threshold effects)
11:00	Ranny Budnik – Color Centers as radiation detectors
11:15	discussion
13:30	Maria Elena Monzani – Perspectives for low-mass dark matter searches with the LZ experiment
13:45	Tien-Tien Yu – LDM detection with electron recoils in with semiconductor targets
14:00	Juan Estrada – Searching for sub-GeV DM with DAMIC
14:15	Yoni Kahn – Searching for sub-GeV DM with Graphene Target
14:30	discussion
15:15	Lauren Hsu – How deep is deep enough for light mass/very light dark matter searches?
15:30	Scott Hertel – Dark Counts / Low Energy Detector Backgrounds
	Why do some detector technologies have them, and what does this suggest about ultimate design of light mass and very light mass DD experiments?
15:45	discussion

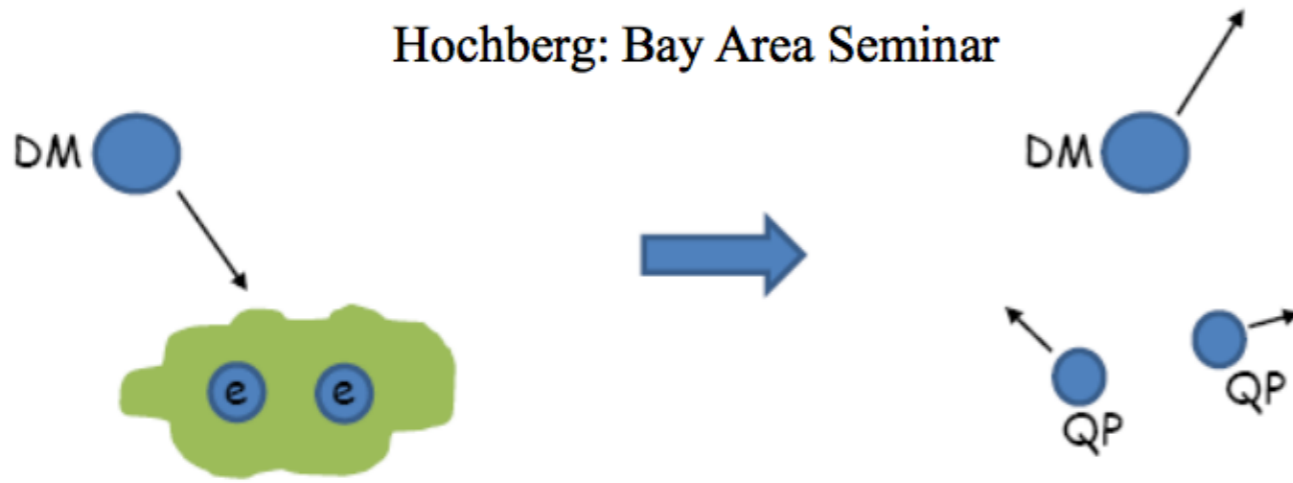
# DD WG Thursday summary

- superconductors (Zhao)
- superfluid helium (Zurek)
- using superconductors to search for  $A'$ , scalar, or pseudoscalar DM (Lin)

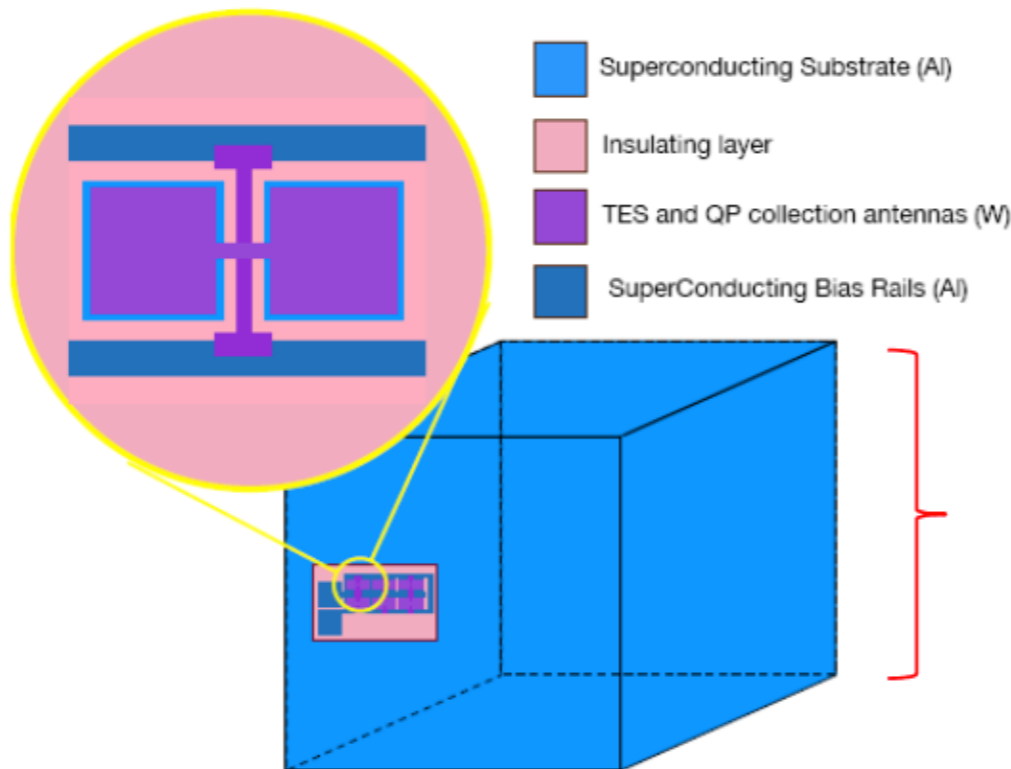
# Superconductor as detector

Y. Zhao

Hochberg: Bay Area Seminar

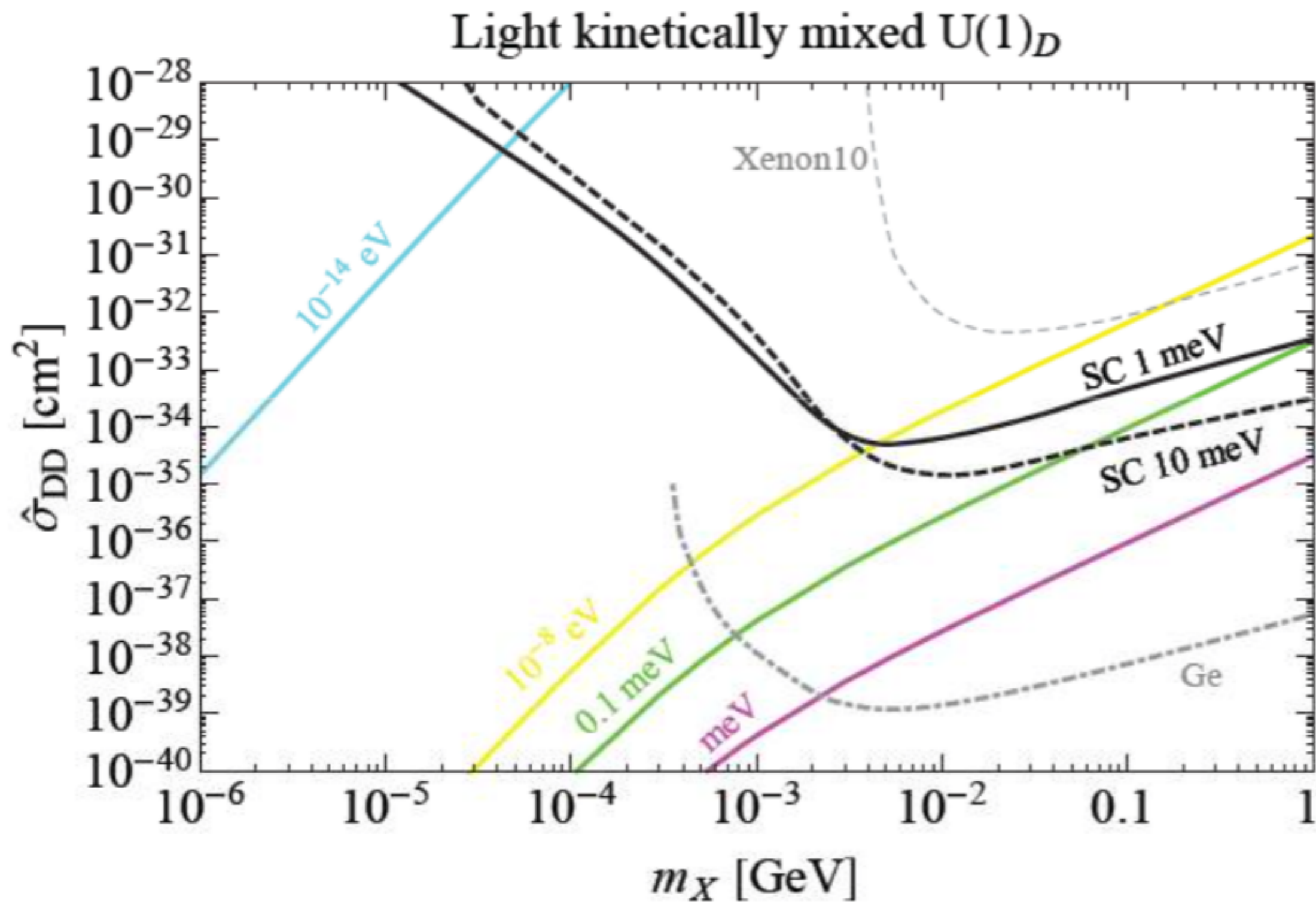


60% quasi-particles  
40% athermal phonons



5 mm

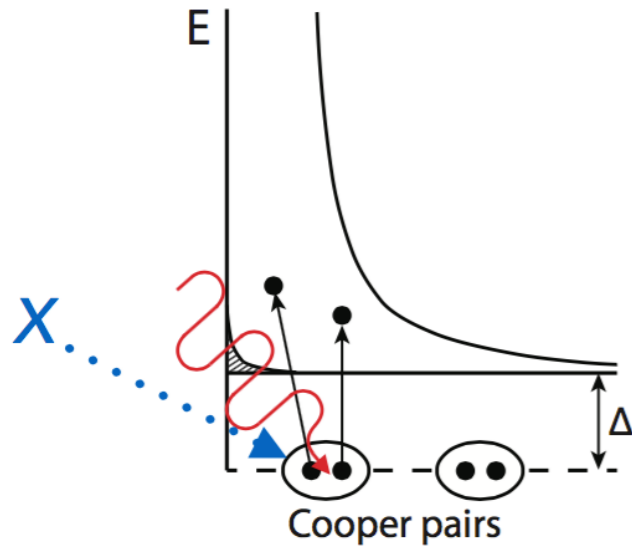
Need TES w/ amazing sensitivity ( $\sim 1-10$  meV)



# Search for $A'$ , scalar, or pseudoscalar DM w/ sc

T. Lin

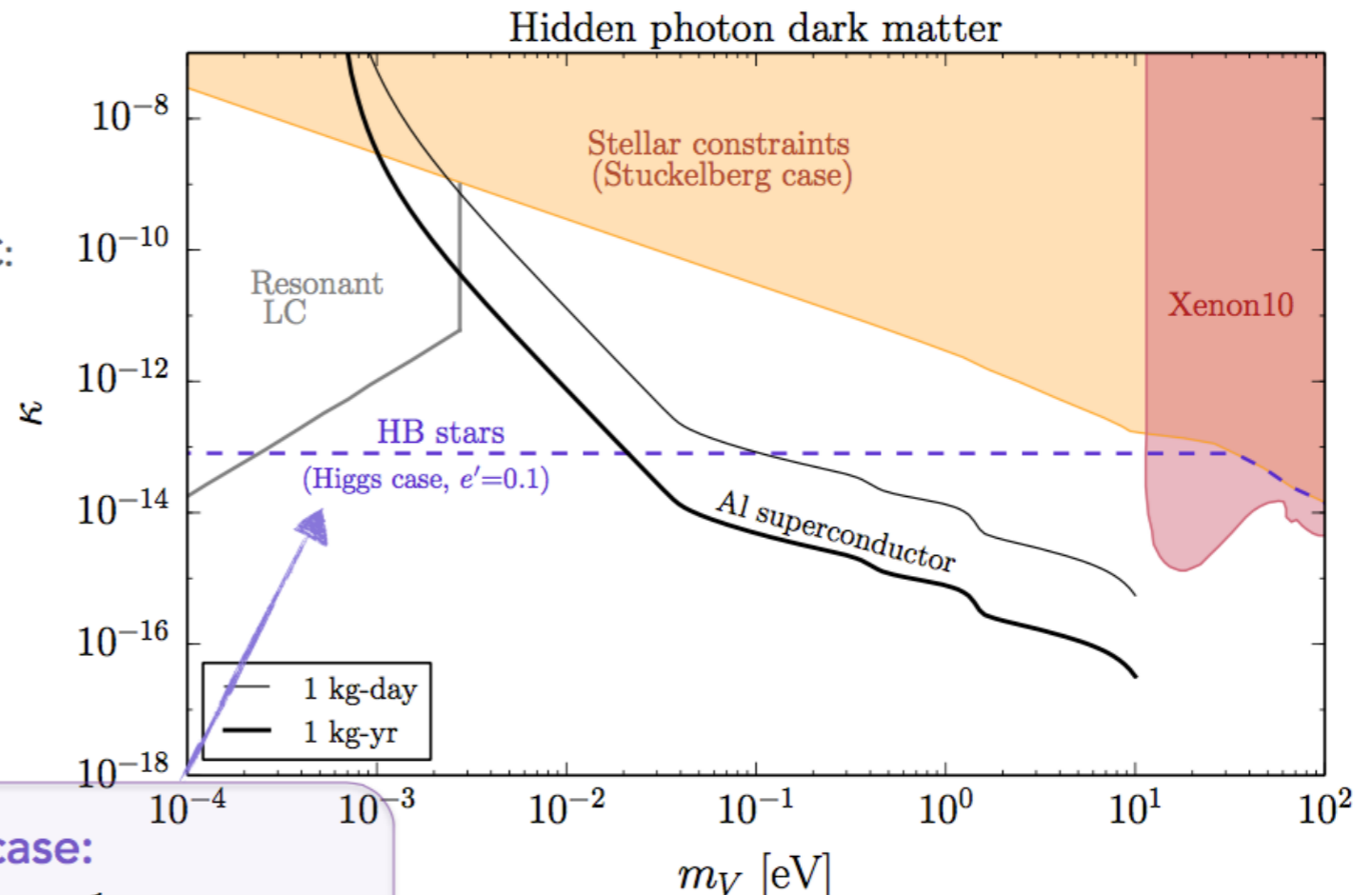
## Absorption



→ absorb all of the mass-energy of incoming dark matter, excite electrons

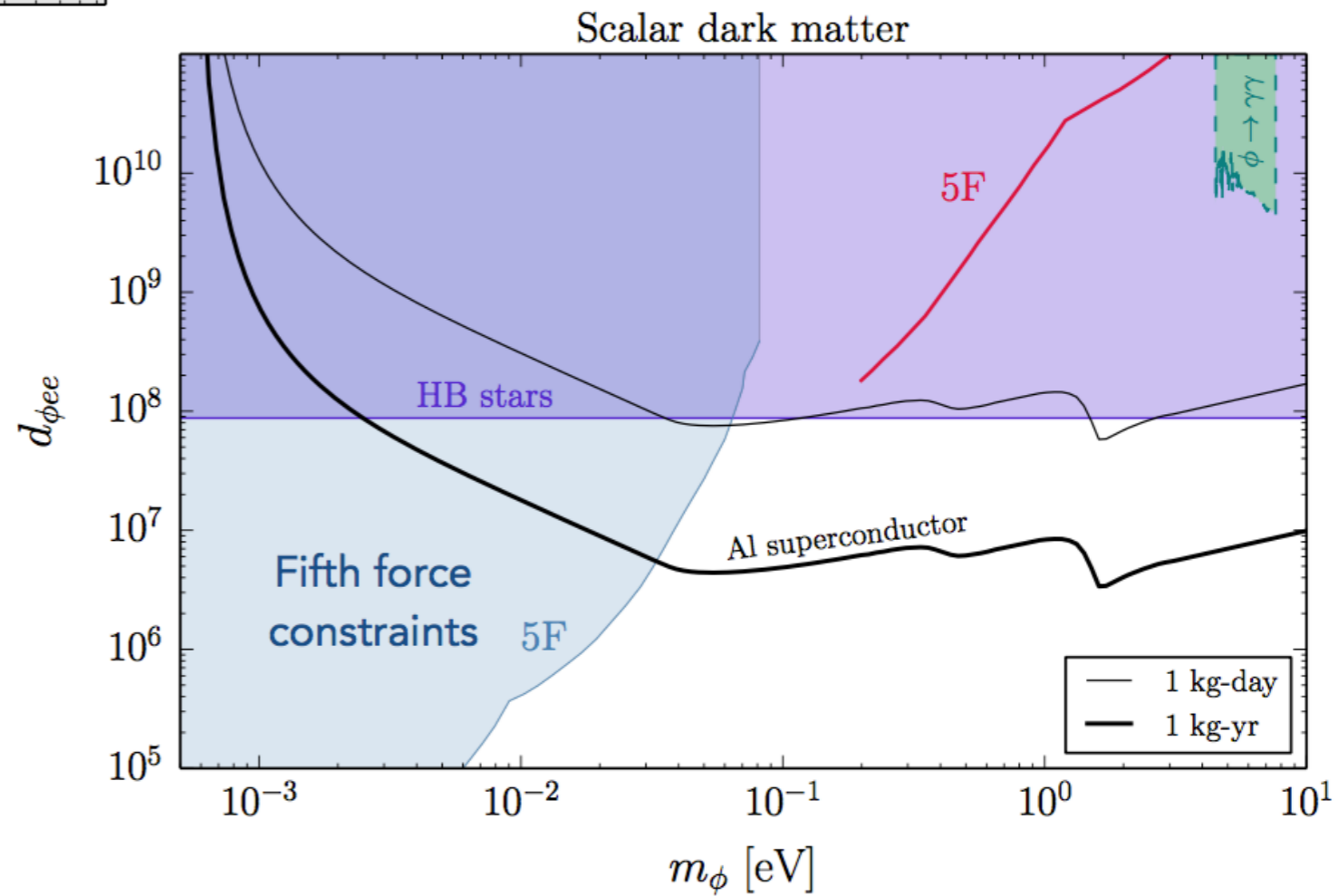
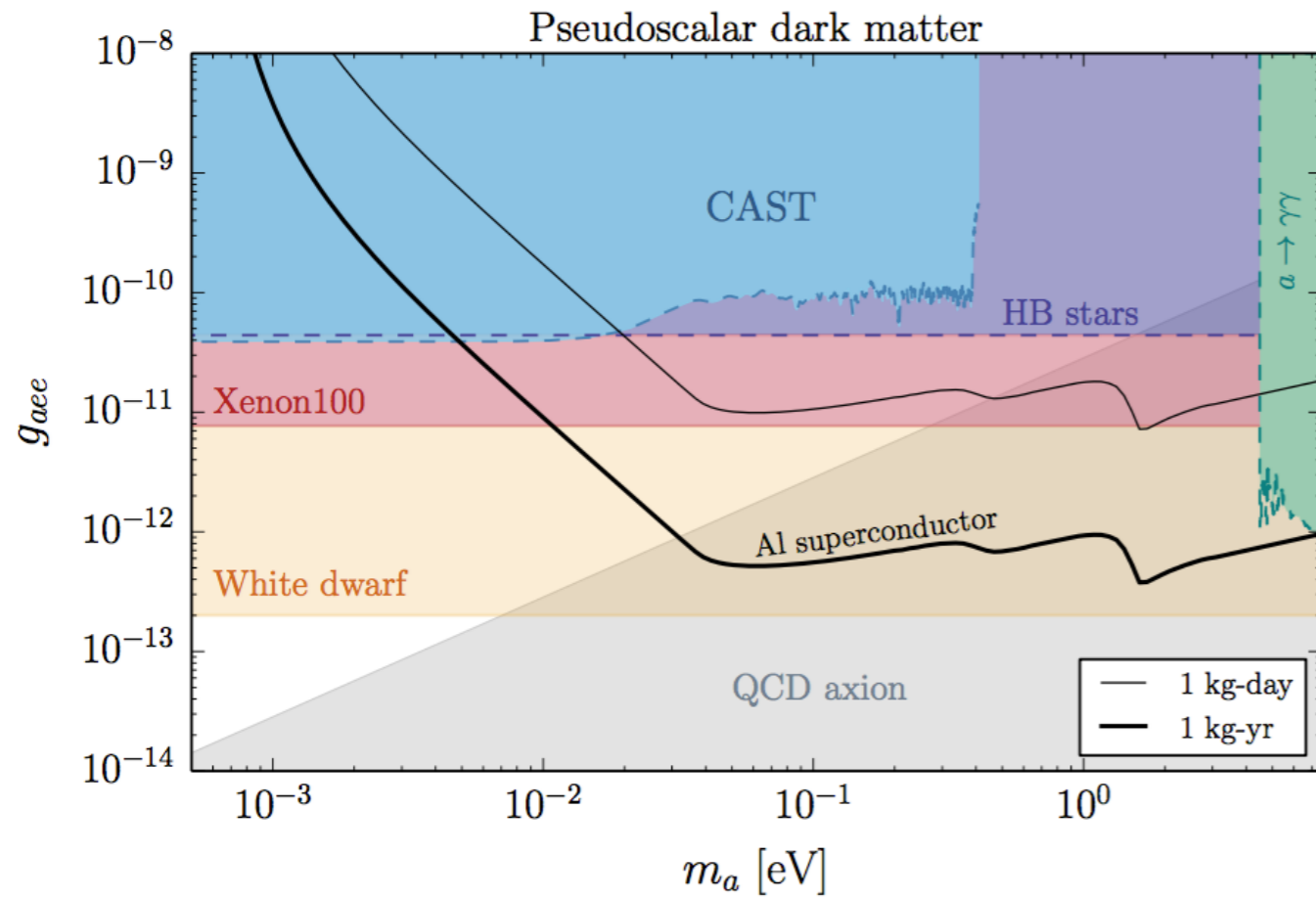
Resonant LC:  
Chaudhuri  
et al. 2014

Higgs case:



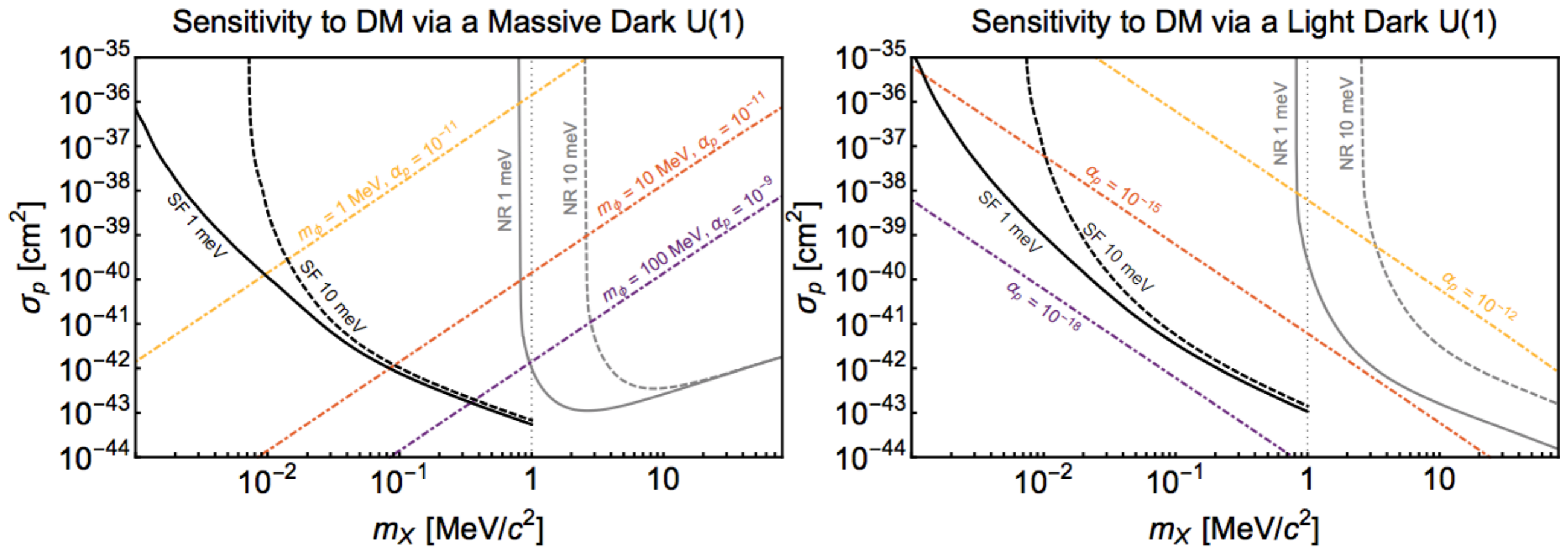
# Search for $A'$ , scalar, or pseudoscalar DM w/ sc

T. Lin





# Superfluid Helium



K. Zurek

work in progress, discussion w/ D. McKinsey lab