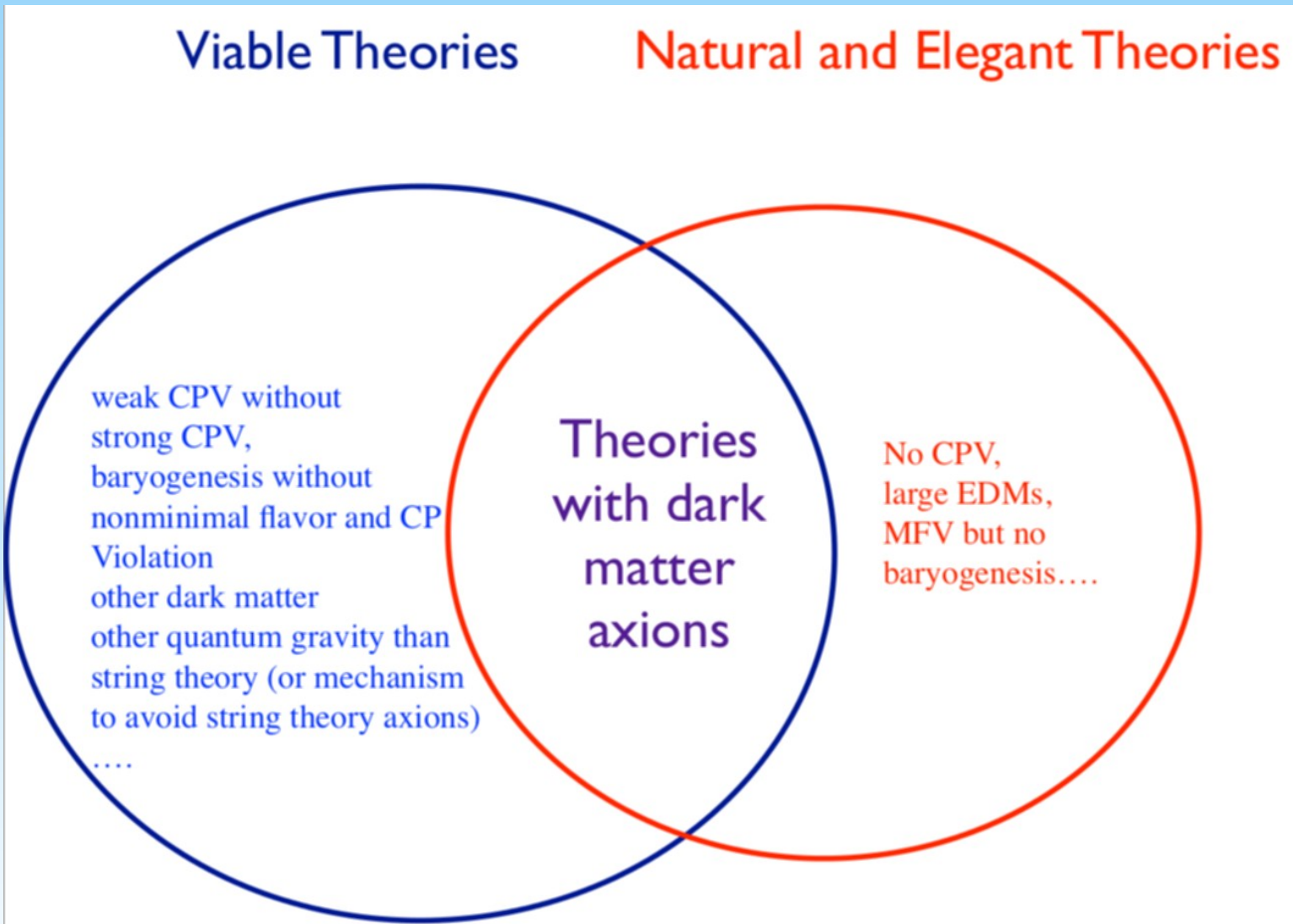


# Closing Comments

Axions are as well motivated as  
ever (if not more so)

# Axions are still a compelling dark matter candidate



LHC (and WIMP detectors) not finding SUSY strongly suggests axion matter

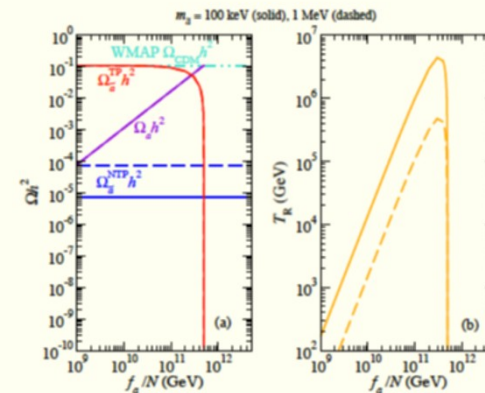
# LHC finding SUSY would strongly suggest axion dark matter

Why thermally-produced neutralino-only DM is not the answer (in spite of the hype):

- Generates too much or too little DM; only rarely is  $\Omega_{\chi}^{std} h^2 \sim 0.11$  : fine-tuned!
- gravitino problem and BBN constraints
- neglects the strong CP problem and its solution

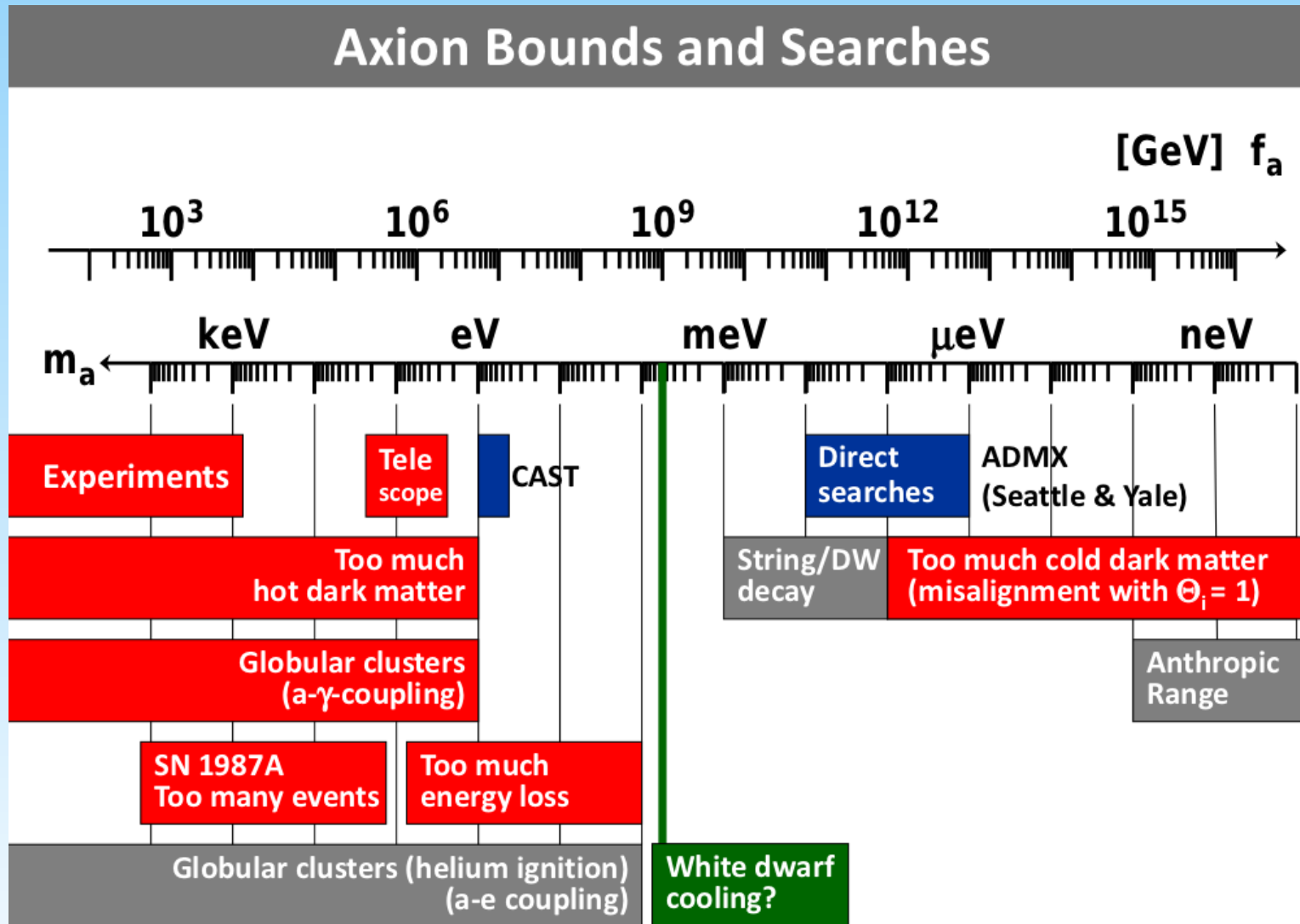
**mSUGRA model with mixed axion/axino CDM:  $m_{\tilde{a}}$  fixed**

- ★  $(m_0, m_{1/2}, A_0, \tan \beta, \text{sgn}(\mu)) = (1000 \text{ GeV}, 300 \text{ GeV}, 0, 10, +1)$
- ★  $\Omega_a h^2 + \Omega_{\tilde{a}}^{TP} h^2 + \Omega_{\tilde{a}}^{NTP} h^2 = 0.11$
- ★ model with mainly axion CDM favored for large  $T_R$ !

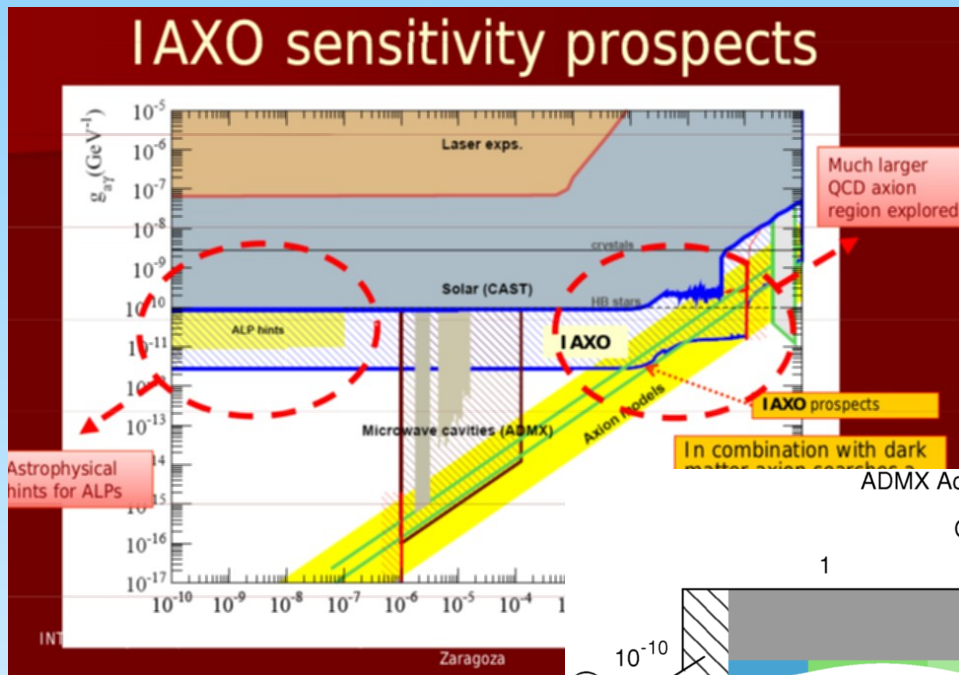


-H. Baer

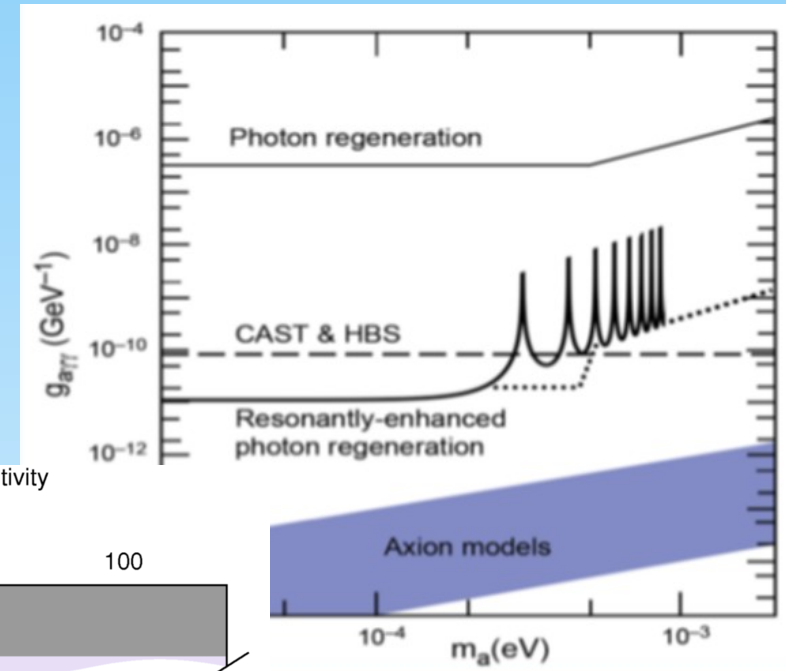
# We know where to look



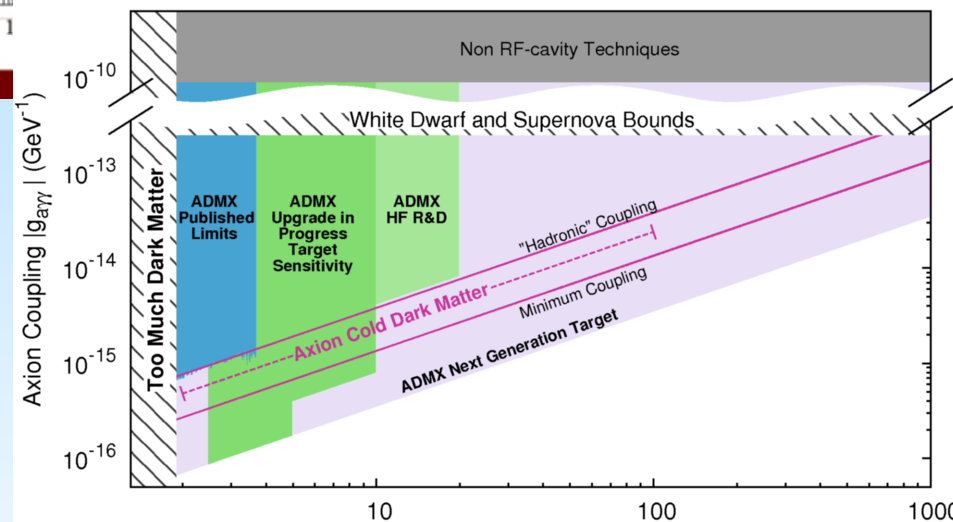
# We know how to look there\*



I. Irastorza



W. Wester



- We are here to envision the next- & next-next-generation experiments in three areas – dark matter, solar & purely laboratory searches

- Van Bibber

\*Except for the 1 meV axions from hell, but we'll think about it

# We have Agency Support

## Comments

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We appreciate your efforts to plan and prioritize as a community. In a time of flat or decreasing budgets we cannot support every small group, and spreading funding too thin minimizes the potential for progress and real scientific breakthroughs.

Congratulations on your progress towards a highly successful workshop.

We look forward to your report!

J. Cottam

And they want us to give them directions



# The Report

**Goal: Roadmap for axion research for the next decade**

- 1) Rapporteurs will digest the presentations and discussions into text
- 2) Organizers will edit rapporteur submissions into a coherent roadmap
- 3) Roadmap will be made available to workshop participants for input
- 4) Document will be submitted to Rev. Mod. Phys

# Thanks to

Laura Lee and the INT staff

DOE, NSF, INT

Rapporteurs

Participants

