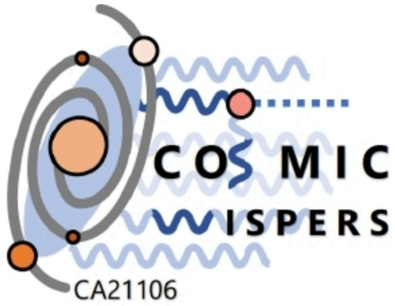


WG-3 Summary

Astrophysics goals and challenges

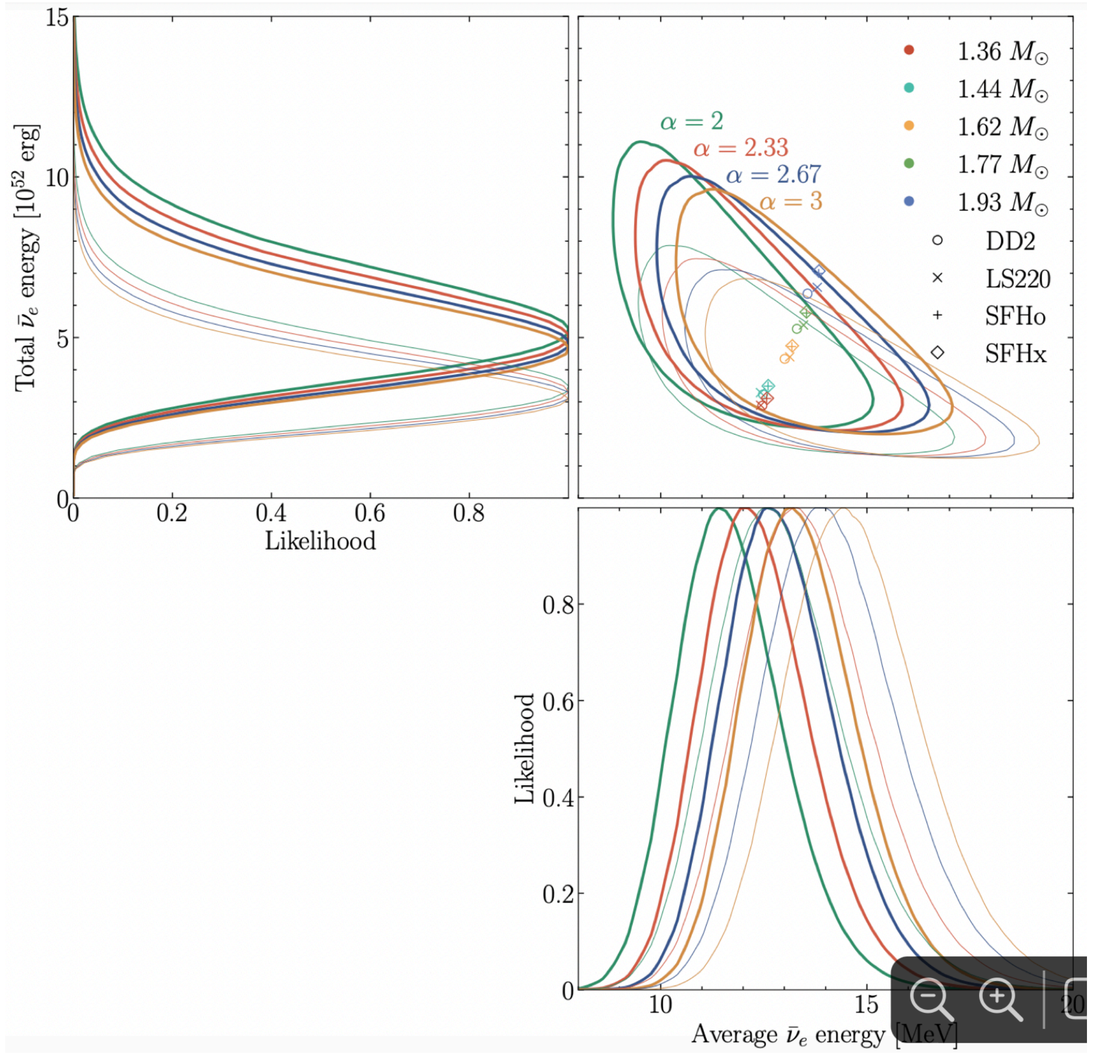
Maurizio Giannotti,
Universidad de Zaragoza, CAPA

Topics

Discussion focused mostly on NS and SN, topics which requires particular attention

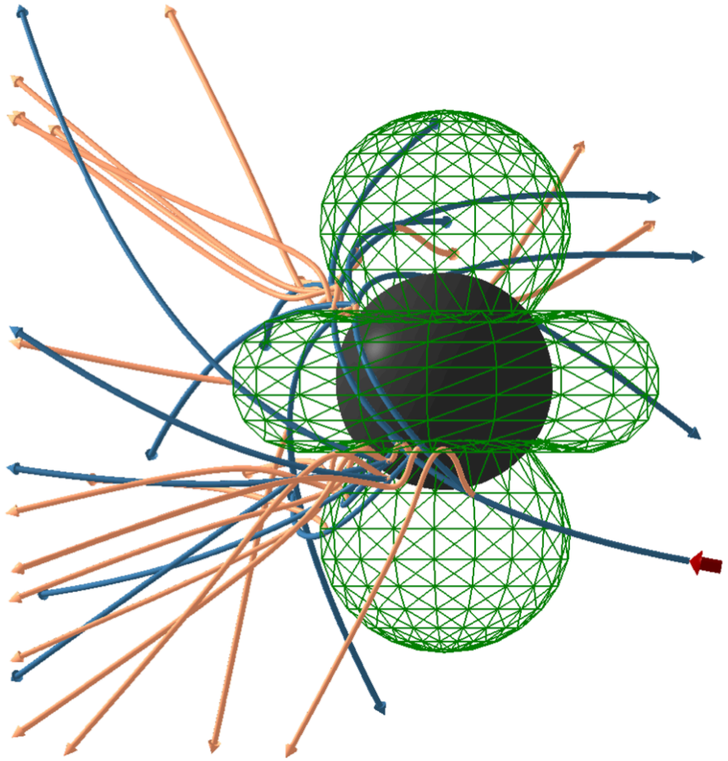
Interesting astrophysical aspects of multiaxion scenarios:

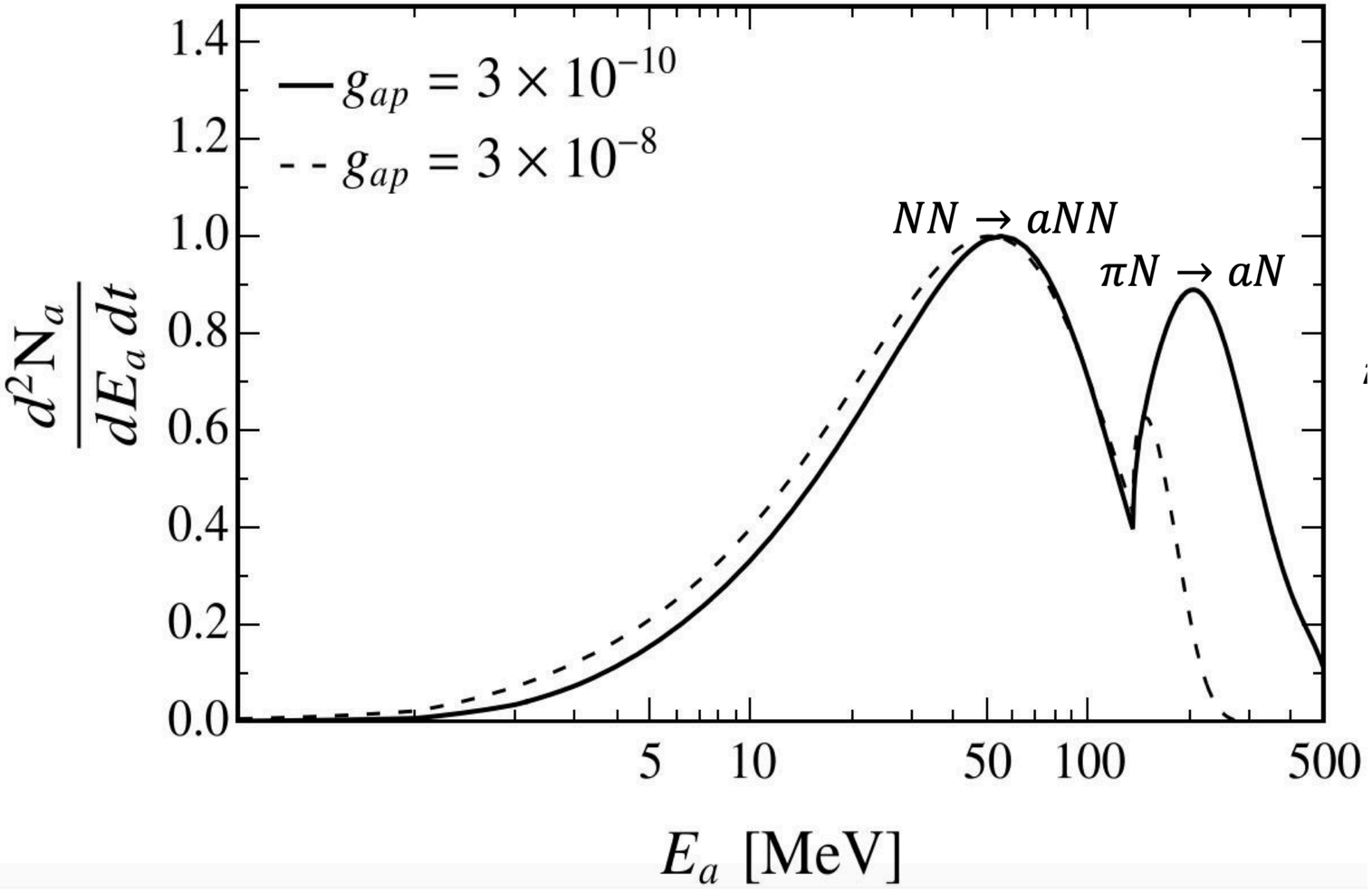
- Impact on universe transparency
- Relax bound on SN trapped axions?



Topics

Understanding the source requires also strategies to detect messengers





Preparation of Material

White paper: Topics? Some recommendations: updated stellar bounds, updates on transparency hints, recent developments on detection of DM axions using stellar sources (DM axions conversions in magnetars). Extragalactic astrophysics: astroparticles tools to understand galaxies. Do we need Fuzzy DM?

Repository Wiki-like: useful documentation for experiments, bounds, astrophysical probes existent and of next generation, databases, etc.

Repository for software tools?

Pedagogical material? Repository of lecture notes, use of databases, etc.

Roadmap

Deciding a strategy to proceed with the research in Axion and other Feebly Interacting Particles.

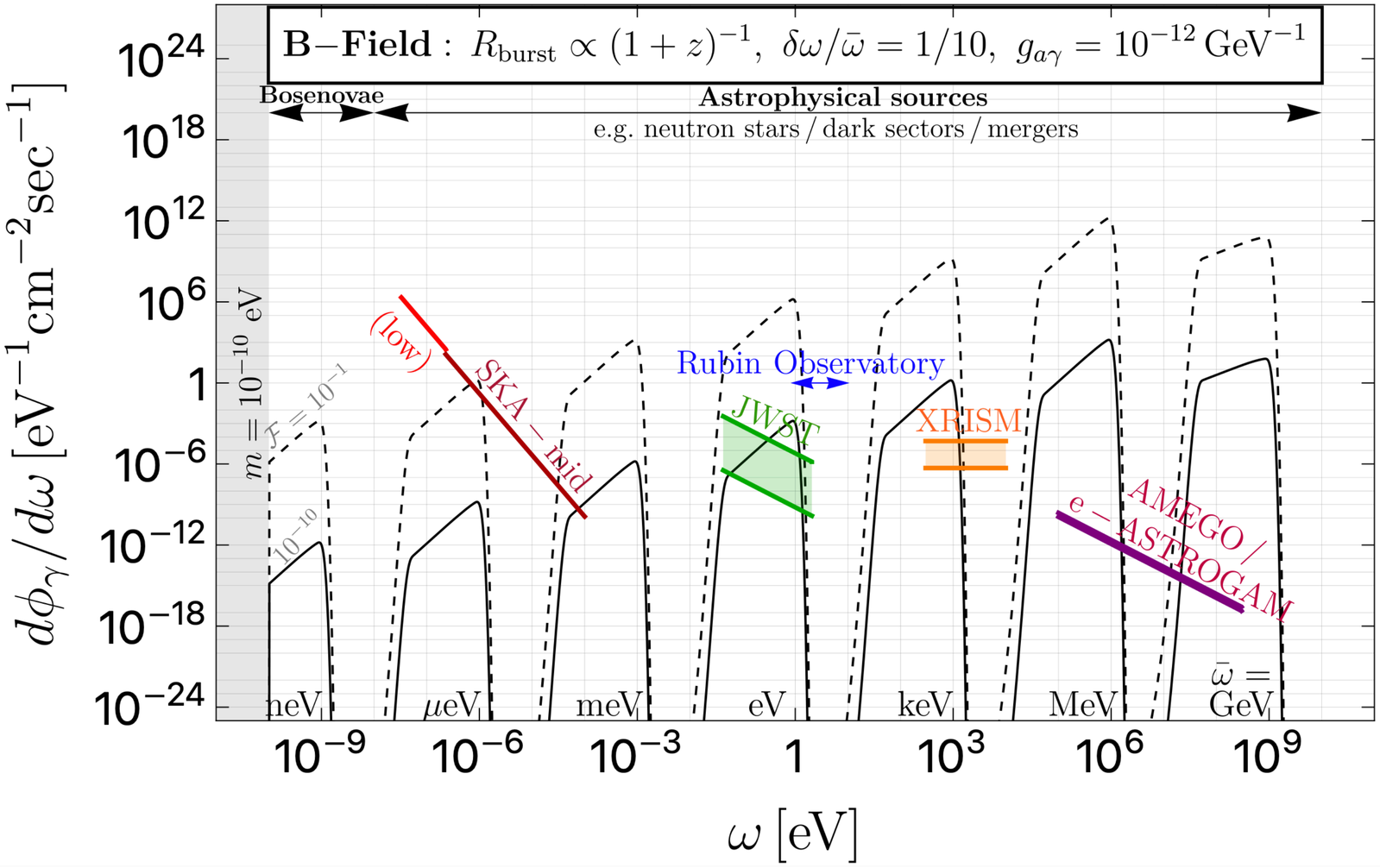
It is essential the communication and collaboration with experts. Some aspects (advanced data analysis, observations, specific astronomical tools) are too difficult to control.

Clear documentation of activities in order to transmit and communicate more effectively the processes.

Roadmap

Present competing arguments to push for the construction of instrument to cover the MeV gap in astrophysics ?

Joshua Eby, Volodymyr Takhistov
→ arXiv:2402.00100



Wish List

What do we need?

- What instruments would be ideal?
- Data?
- Software tools?
- ...

IDEAS?

- Round table discussion later today

- WG meetings soon

We can keep using the existent Google Doc for ideas and proposal.

Write clearly. Erase old material

→ Google Doc