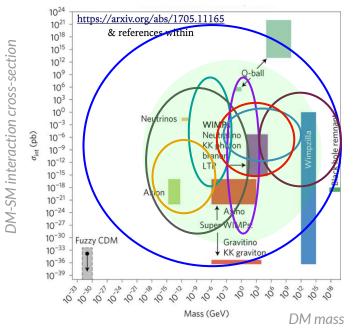
The Dark Matter landscape

Wide range of mass scales / interaction strengths for DM candidates

→ wide range of **theories** and **experiments** to discover DM





The best region to find dark matter is the one where more techniques and ideas can **discover** and **explore** DM!

Two activities with Swedish involvement in this talk promoting dark matter complementarity:

- iDMEu: an initiative for Dark Matter in Europe and Beyond
- Dark Matter complementarity within Snowmass 2021

(for a third activity on dark matter computing/analysis workflows within the <u>ESCAPE</u> project: see <u>this talk</u>)

dark matter is a growing activity in our community

→ contact us and join in on these activities!

iDMEu

initiative for Dark Matter in Europe and beyond

https://indico.cern.ch/e/iDMEu



After the European Strategy Update process and during a joint ECFA/APPEC/NuPECC meeting, a number of DM researchers met with similar questions:

E.g. "what are your assumptions?" "why do you use this technique?" "how will findings in your DM research impact my DM research?" "where can we meet and discuss this topic in depth after this meeting?"

we realized that there was **no common platform** for these discussions or for resource sharing → we decided to start developing it!

Three connected **iDMEu objectives**:

Collect dark matter resources in an online meta-repository

Facilitate (and participate in) new cross-community scientific collaborations

Swedish undergraduate

Help **develop** a common dark matter **story** for different audiences (= **outreach**)

iDMEu is taking shape

Meant as a **service** to the community with a **lightweight** organization

Helped by a **Task Force** put in place by APPEC/ECFA/NuPECC, and by reaching out to communities towards a **kick-off** meeting in **May 2021**

The JENAA iDMEu LOI proponents:

Elena Cuoco Marco Cirelli Caterina Doglioni Gaia Lanfranchi Jocelyn Rebecca Monroe Silvia Pascoli Federica Petricca Florian Reindl

Thanks to everyone who gave post-it input at the poster session of Partikeldagarna 2019!

iDMEu's success will be the success of the activities it facilitates!

Dark matter complementarity for Snowmass 2021

- Snowmass2021: input to prioritization of the US particle physics in the next decade
 Similar community process as European Strategy Update, different implementation
- We are witnessing a shift in how we think about searches for dark matter.
- We are in an exploratory phase where new ideas can be implemented on short timescales, operating alongside longer-term projects
 (e.g. HL-LHC, LDMX/SHIP, HyperK, IceCube, FCC, Gen-3 direct detection, CTA, SKA, galaxy surveys...)
 → Key point for DM discoveries and characterization: work together!
- <u>Snowmass</u> efforts towards an updated complementarity picture: you can join <u>this mailing</u> <u>list</u> to participate

https://gordonwatts.github.io/ snowmass-loi-words Word cloud compiled from all the community submissions (Letters of Intent)

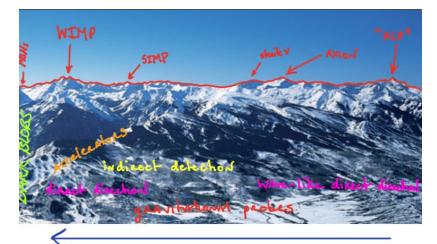
Word Clouds

Word clouds are made by looking at the word frequency in the LOI's. The more frequent the word, the larger the font-size in the word cloud.

All I OT's



A dark matter "big picture" prototype by Susan Gardner



MASS