

EDELWEISS at LSM

January 26, 2023

EDELWEISS 2022 status

- Final analyses of 2019/2020 data
- New EDELWEISS low threshold detectors (CRYOSEL): setup preparation in BINGO @ LSM
- First above-ground tests of CRYOSEL detectors
- Decommissioning of the EDELWEISS-III LSM setup

EDELWEISS 2022 : Final analyses of 2019-2020 data

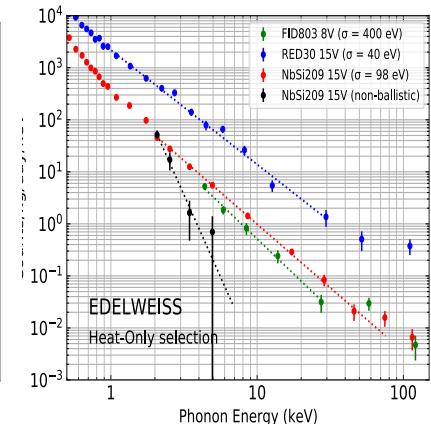
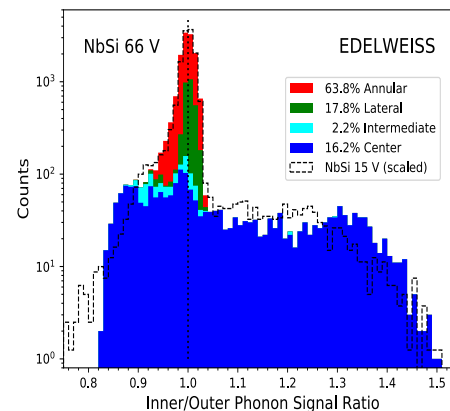
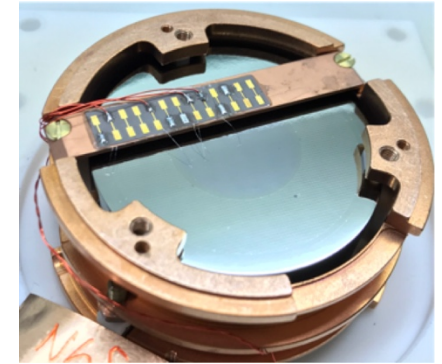
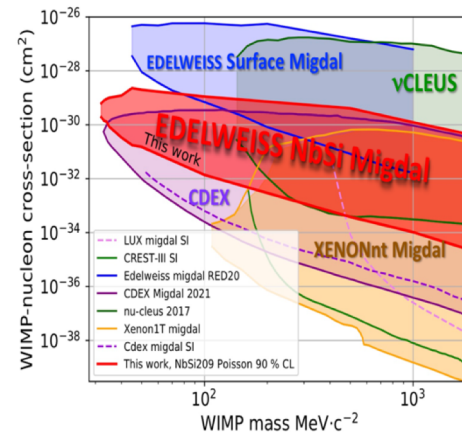
- Goal: suppression of dominating background of Heat-Only events.

*Key to fully exploit
low-threshold data
of our Ge detectors (1 e-h pair)*

- NbSi TES in 2019-2020 LSM run: use of this phonon sensor shows a reduction of HO background:

PRD 106 062004 (2022)

- New (**EXCESS 2022 workshop**): **further reduction obtained with NbSi TES, this time using prompt phonon signal**
- More efficient use of this effect: **CRYOSEL ANR (2022-24)**

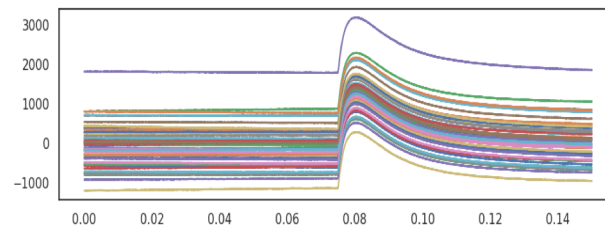
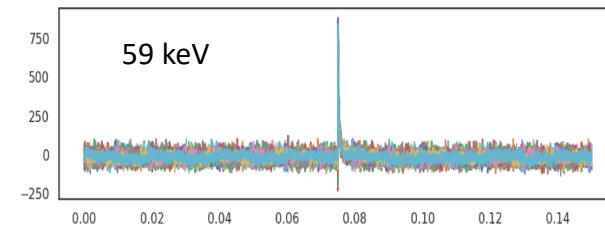
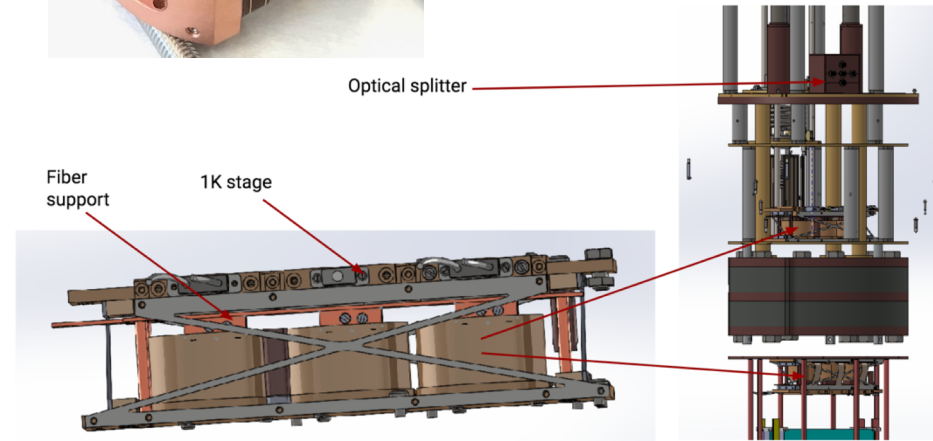
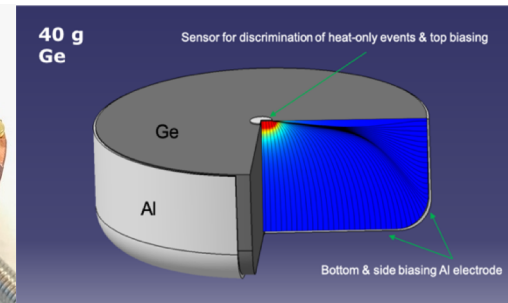
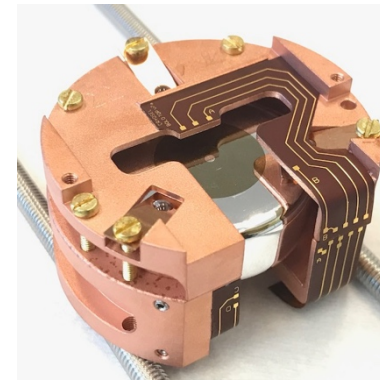
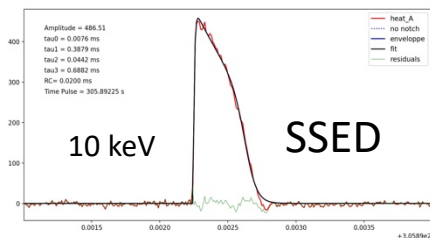


EDELWEISS 2022 : CRYOSEL project

Single electron energy resolution using NTL
amplification of *Ge-NTD* signal

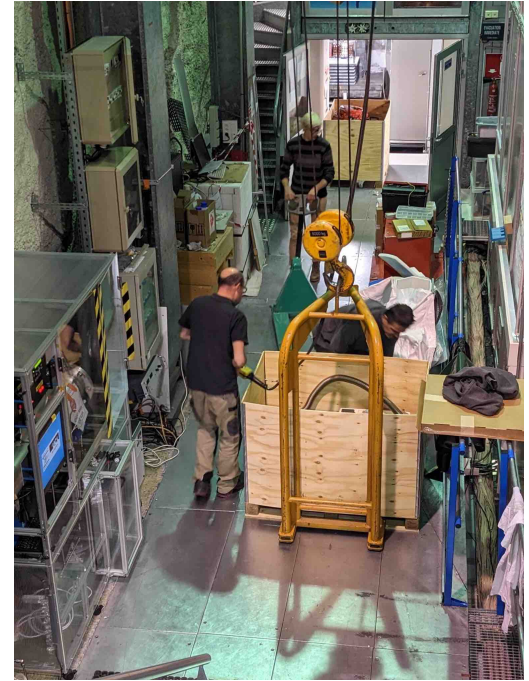
Single electron tag using a *NbSi μ wire* to
trigger on the athermal NTL phonons produced
in small acceleration region just below the
sensor

- Detector installation design in BINGO cryostat
- First proto tests @ Orsay and Lyon



EDELWEISS 2022 : decommissioning

- Spring & summer 2022 :
 - Cold electronics and cabling
 - Part of the cryostat (low T stages)
 - Muon veto electronics & HV
- Winter 2022 :
 - ^3He
 - warm electronics, neutron and radon detectors
 - compressors
 - “control room” data acquisition



Plans for 2023

- **January 17th**: inventory by Neel of cryogenic parts to be recovered
 - Plans (with LSM) to open clean room roof to start evacuation of recoverable elements early this year
 - Need to move N₂-flow detector storage out of clean room
- **Spring planning** (closely linked to BINGO planning)
 - Disassembly and storage of lead & polyethylene
 - Dismantling of support structure
- **Summer**: installation of Edelweiss FID803 detector inside BINGO cryostat at LSM to monitor backgrounds
- **Fall**: installation of 3 CRYOSEL detectors + laser calibration system in BINGO