Update from the Spokespersons and goals for the Collaboration Meeting

XLZD Collaboration meeting
30 June 2025

Dan Akerib, Marc Schumann

Welcome to LNGS

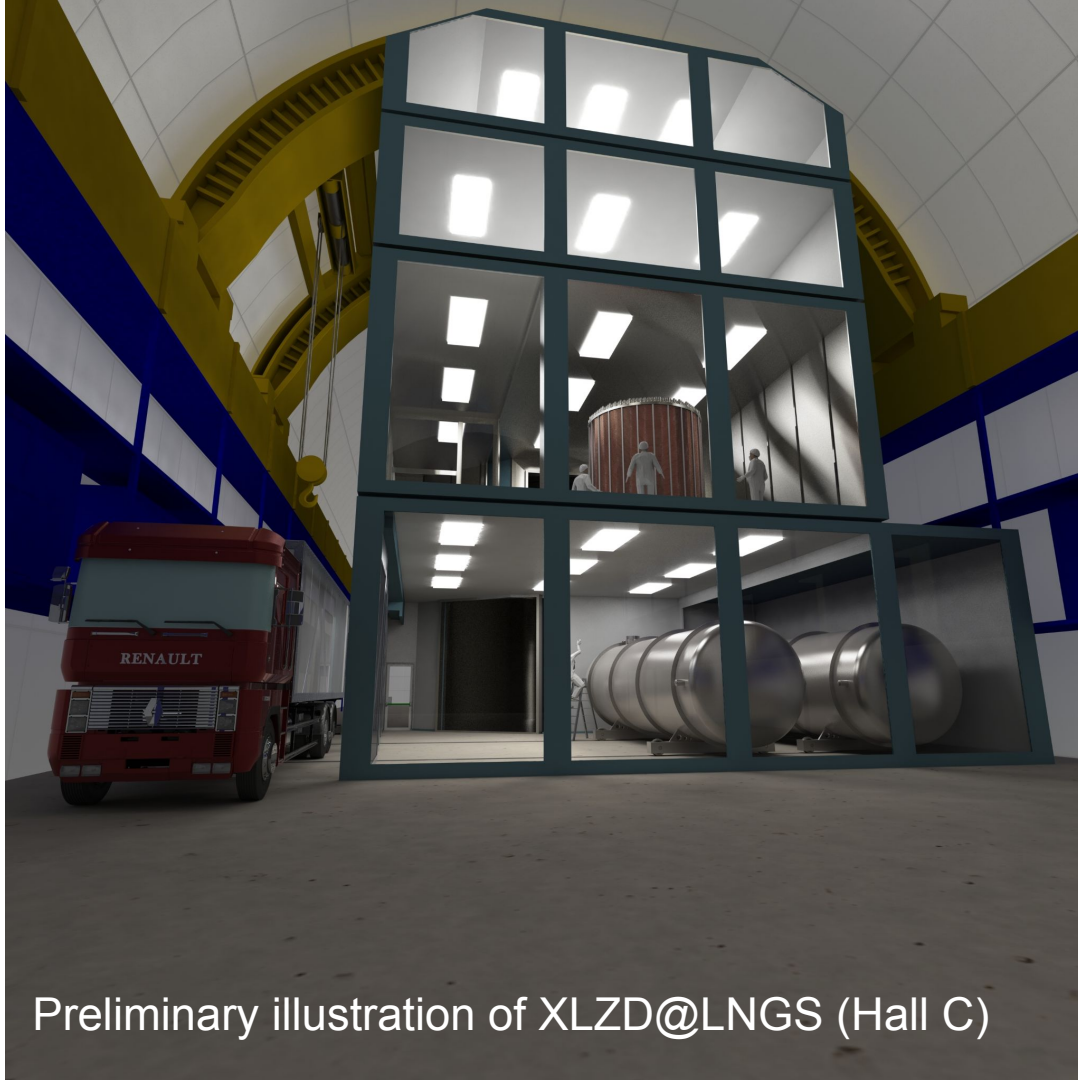
This is our 4th in-person meeting and the first since we officially formed the XLZD collaboration.

More than 130 people registered!

A great thanks to Marco+LOC.

LNGS director Ezio Previtali will welcome us tomorrow.

Underground visits Mon+Tue.

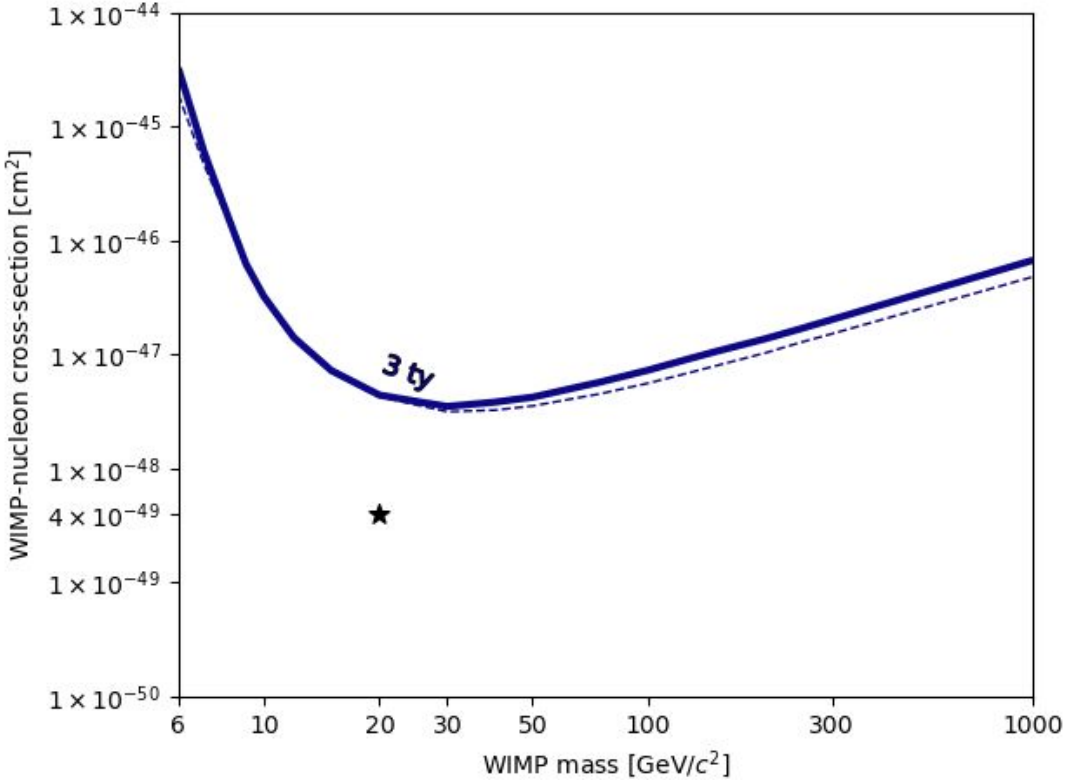


Preliminary illustration of XLZD@LNGS (Hall C)

Outline

- Science highlights and goals
- Collaboration organization, status, achievements
- Project development process - the “WBS” (work breakdown structure) and all that
- Siting
- Impact of nEXO pause: churn and opportunity
- Xenon acquisition developments
- Goals and structure of the meeting

Our Goal I: Direct Detection of Dark Matter

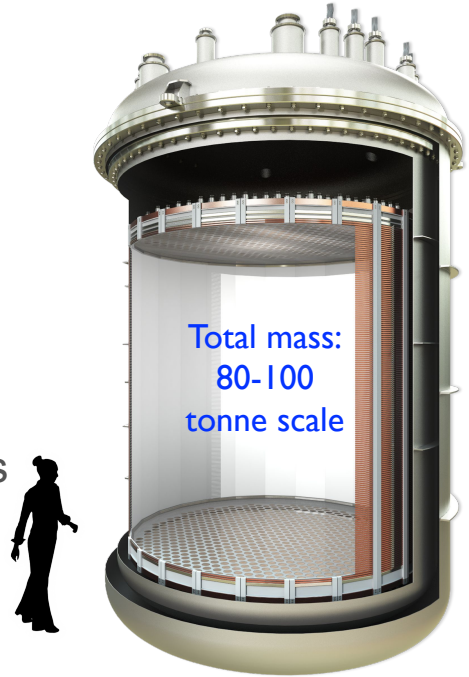


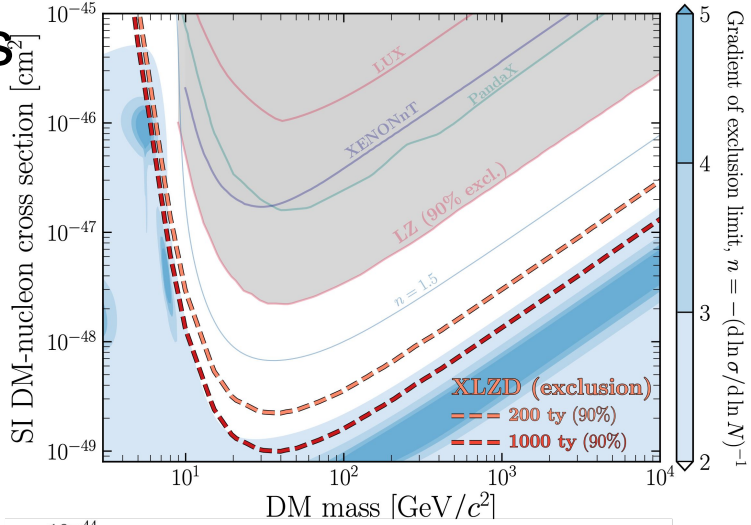
Study from Knut for EPPSU

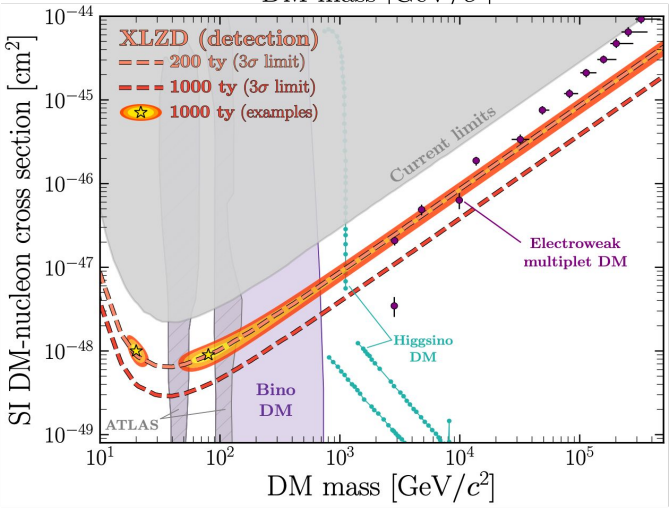
- **How would the detection of a 20 GeV WIMP with 4x10^{-48}cm² look in XLZD?**
- Relatively simple detector model (LZ-based)
- No AC, no ^{8}B neutrinos
- 0.1 ppt Kr, 0.1 μBq/kg Rn
- CNvNS, solar ν, ^{124}Xe, ^{136}Xe
- Asymptotic calculations only
- Wiki link

XLZD: definitive search for high mass WIMPs

- WIMPs and neutrino “fog”
  - Indistinguishable background from astrophysical neutrinos
  - Sensitivity rapidly falls - 20% flux uncertainty
  - Systematic limit (1000 t-y exposure) = practical limit of ~80-tonne target detector
  - 3-sigma discovery
- Best of LZ and XENONnT
  - ~10x mass: 60 t of active LXe
    - Design for 80 t
  - Double TPC linear dimensions
  - Reduce backgrounds from instrument, radioactivity

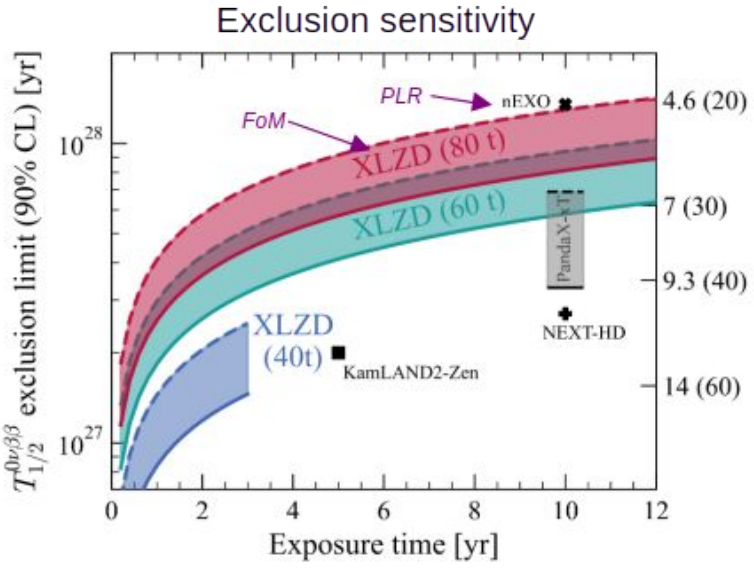


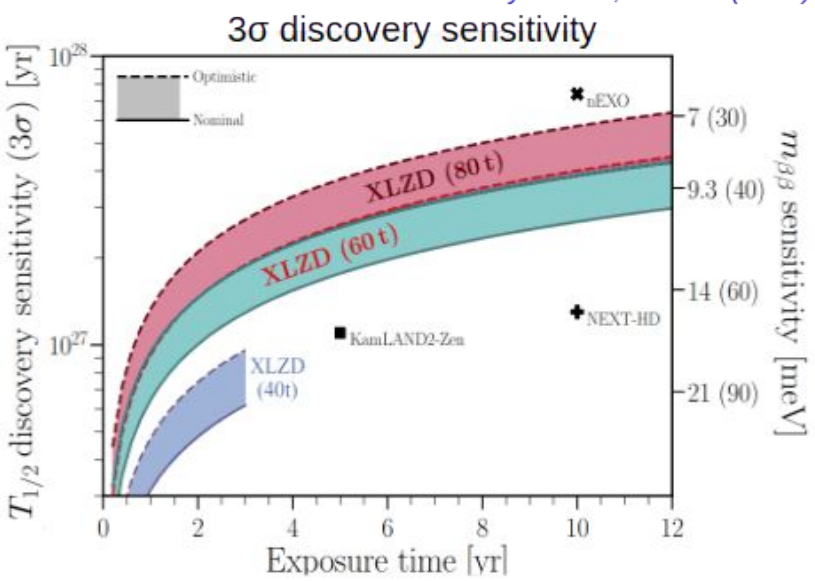




Our goal II: Detect 0νββ in ^{136}Xe with a *natural* Xe target

J. Phys. G 52, 045102 (2025)

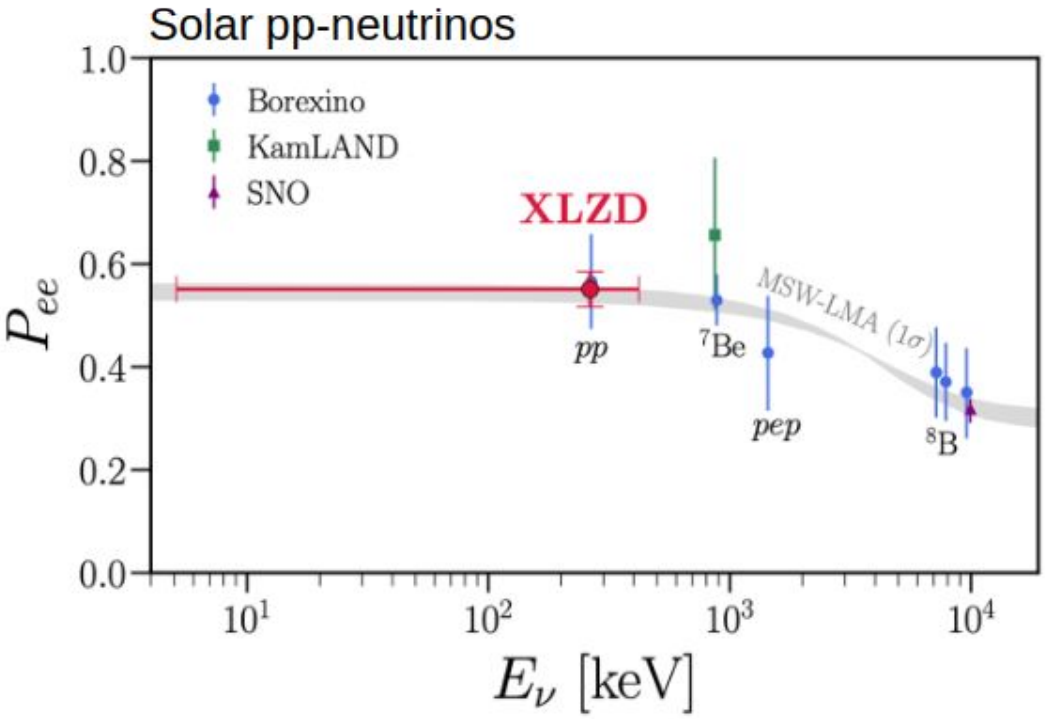


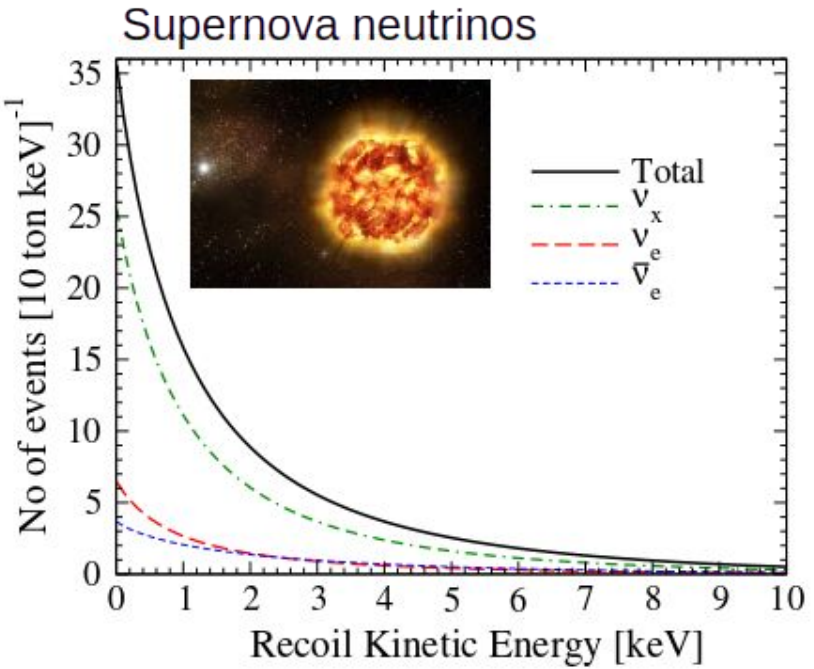


- Sensitivity via **Figure-of-Merit estimator**
  Agostini et al., PRD 96, 053001 (2017)
- **3 target masses, 2 background scenarios**
  → optimized fiducial targets
- Expect improved sensitivity with PLR study
  → 40% improvement in LZ study
  PRC 102, 014602 (2020)

Parameter	Scenario: Nominal	Scenario: Optimistic
^{222}Rn concentration [μBq/kg]	0.1	
BiPo tagging efficiency [%]	99.95	99.99
External γ-ray [% LZ]	25	10
Installation site	LNGS	SURF
Energy resolution [%]	0.65	0.60
SS/MS vert. separation [mm]	3	2

Our goal III: Neutrino Physics



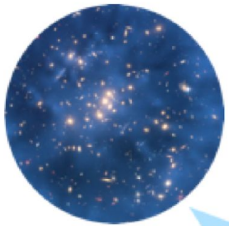


All science plots from XLZD Design Book and 0νββ paper

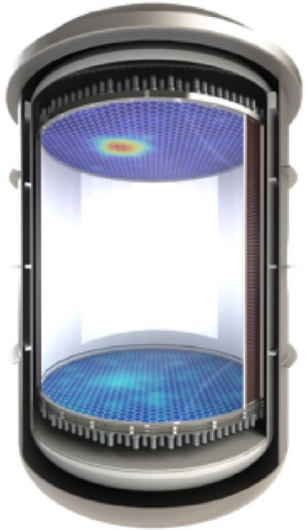
➡ big applause for Theresa and Alex for leading these publication efforts

A Liquid Xenon *Observatory* with a broad science program

Dark Matter
WIMPs
Sub-GeV
Inelastic
Axion-like particles
Planck mass
Dark photons

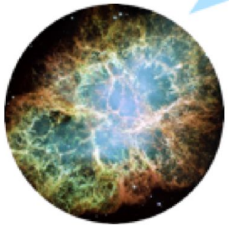


Neutrino nature
Neutrinoless double beta decay
Neutrino magnetic moment
Double electron capture

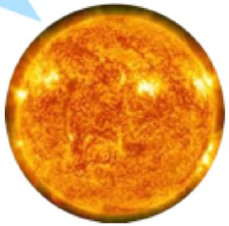


See also XLZD whitepaper

Supernovae
Early alert
Supernova neutrinos
Multi-messenger astrophysics



Sun
pp neutrinos
Solar metallicity
^{7}Be, ^{8}B, hep



Unprecedented reach for rare low-energy processes

The XLZD Collaboration

Countries: 17
Institutions: 79 → 5 new groups joined recently
Members: 450+

xlzd.org

Collaboration organization: current status

- Organizational entities in place
  - **Spokespersons** (meet 2-5x per week) → this presentation
  - **Executive board**: 10 elected members, chaired by spokespersons, biweekly meetings (wiki)
  - **Institutional board** (all faculty, permanent/permanent track scientists):
    chaired by C. Hall. Decides on governance, membership, meets ~0.5-1x per month → Mon
  - **Active working groups or task groups**
    - Science & Sensitivity → Tue
    - Requirements → Tue
    - Detector Design and R&D → Mon
    - Siting → Mon
    - WBS core team

    Combine to increase coherence; include UK efforts

    ➡ Will evolve into WBS structure
  - **Task forces** *(short term; to look at one topic and inform exec)*
    - Simulation/Software → Mon
    - Xe acquisition
  - **Committees** - are being established
    - Speakers
    - Publications
    - Outreach

What did we achieve?

- Working tools in place (wiki, slack, google drive, github)
  →we still need to optimize/improve (e.g., collaboration membership, mailing lists etc)
- XLZD members can get access to DARWIN computing resources @ KIT
- Defined a preliminary work breakdown structure (WBS) →see following slides
  - Organize project (WGs), prepare future scope sharing, keep site flexibility
  - Better cost estimate
    → important for funding proposals, managing scope across nations / funding agencies
- First XLZD papers: design book and 0νββ sensitivity
- Continuous exchange with the 4 labs → new: SNOLAB back in the game
  - DARWIN LoI for LNGS transferred to XLZD
  - EoI for SNOLAB is being prepared
- Submitted input to EPPSU → needs more work!
- Presented XLZD as serious contender at 3rd International 0νββ Summit
  - Several meetings with people from nEXO
- Talks, posters at conferences
- Activities in WGs and task forces (preparation of tools for sensitivity studies)
- etc. etc.

Resources – A preliminary, incomplete overview

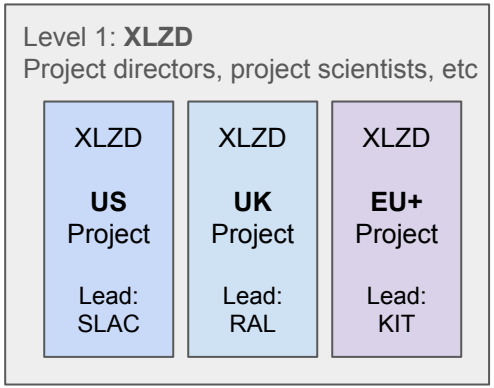
Although XLZD is not yet an approved, funded project, we have access to resources:

- UK: 11 M$ to develop XLZD@Boulby - pre-project construction
  - +12 M$ for Boulby development
- Engineers, workshops: easy access to resources at most EU institutions;
  SLAC, PSL contributing with engineering
- LNGS, Boulby, SURF and SNOLAB providing or offered engineering support to develop XLZD at lab
- R&D funding for DARWIN/XLZD:
  available at many European institutions, Israel, Japan, Australia
- US: SLAC - 1 M$ project development, 1 M$ Lab R&D in-hand or committed
  - FY26: DOE HEP will start pre-project development ($TBD) - should enable further SLAC investment
- 0.75 MCHF (= 0.9 M$) investment funding for XLZD in CH (for 2y)

- *We certainly missed some information here*

XLZD Work Breakdown Structure

- **What?**
  - Definition of technical tasks to construct XLZD
  - First (top-down) assignment of scope to countries based on experience, capabilities, interest
  - (Estimate of project costs -> not yet ready for distribution)
    → final goal: express construction costs for the same detector in different accounting systems (e.g., US/UK, CERN, etc)
- **Why?**
  - Ensure that all critical major WPs are covered
  - Involve more groups in XLZD design and planning
  - Prepare and coordinate funding applications
  - Identify funding gaps, also taking into account unknown host-site



Work **B**reakdown **S**tructure

- ➡ 14 “level-2” (L2) topics, O(100) L3
- ➡ to be developed to next level
- ➡ expect further adjustments

1.01	**Project Management, Admin & Systems Engineering**		**1.06**	**Xe Detector**		**1.10**	**Controls**	
	1.01.01	Project Management		1.06.01	System Engineering & Management		1.10.01	System Engineering & Management
	1.01.02	Environmental Safety and Health		1.06.02	Modeling and simulations		1.10.02	Critical Systems Slow Control
	1.01.03	Quality Assurance		1.06.03	Top PMT array		1.10.03	Non-Critical Systems Slow Control
	1.01.04	Project Management Controls Support (PMCS)		1.06.04	Bottom PMT array		1.10.04	Information Serving
	1.01.05	Systems Engineering Support		1.06.05	Skin detector		1.10.05	Facility interface controls
	1.01.06	Project Science Coordination		1.06.06	PMTs, cold electronics, cabling	**1.11**	**Computing**	
	1.01.07	Communications and Outreach		1.06.07	PMT calibrations		1.11.01	System Engineering & Management
	1.01.08	Sustainability		1.06.08	Field Cage		1.11.02	Computing Infrastructure Software
1.02	**Xe Acquisition**			1.06.09	Extraction region, Gate, Anode system		1.11.03	Onsite computing infrastructure
	1.02.01	System Engineering & Management		1.06.10	Cathode grid		1.11.04	Data Reconstruction Pipeline
	1.02.02	Xenon Procurement		1.06.11	Cathode HV delivery system		1.11.05	Data Analysis Framework
	1.02.03	Long-term storage system		1.06.12	Instrumentation		1.11.06	Simulations Software Framework and Pipeline
	1.02.04	Feed/recovery system		1.06.13	Xe fluid system		1.11.07	Data Centers
1.03	**Xe Purification & Handling**		**1.07**	**Outer Detector System**		**1.12**	**Screening, cleanliness**	
	1.03.01	System Engineering & Management		1.07.01	System Engineering & Management		1.12.01	System Engineering & Management
	1.03.02	Krypton Removal System		1.07.02	Water tank / outifitting and systems		1.12.02	Gamma counting
	1.03.03	Radon Removal System		1.07.03	Optical modeling and simulations		1.12.03	Rn emanation screening
	1.03.04	Liquid phase electronegative purification		1.07.04	Modelling and simultiaon of fluid flow		1.12.04	Other assays
	1.03.05	Gas phase electronegative purification		1.07.05	Neutron detector medium and purification systems		1.12.05	Underground outfitting and protocols
	1.03.06	Cryogenic Xe Storage (ReStoX)		1.07.06	Neutron detector Vessel		1.12.06	Underground industrial precision cleaning
	1.03.07	Xe Diagnostics - electronegative, Kr/Rn/Ar		1.07.07	Gadolinium system		1.12.07	Underground electrochemistry
1.04	**Cryogenics**			1.07.08	Neutron photosensor system		1.12.08	Cleaning of surfaces and treatment protocols
	1.04.01	System Engineering & Management		1.07.09	Reflectors & mechanical structures		1.12.09	Background tracking and evaluation
	1.04.02	Modeling and Simulations		1.07.10	OD Optical calibration	**1.13**	**Integration and Installation**	
	1.04.03	Commercial LN Supply and Storage System		1.07.11	Muon photosensor system		1.13.01	System Engineering & Management
	1.04.04	Customized Cryogenic Systems		1.07.12	Radioscreener		1.13.02	Surface and Underground Infrastructure
	1.04.05	Cryogenic Control Systems	**1.08**	**Calibrations**			1.13.03	Cleanroom in water tank
1.05	**Cryostat**			1.08.01	System Engineering & Management		1.13.04	Surface and Underground materials, supplies
	1.05.01	System Engineering & Management		1.08.02	Sealed source deployment system		1.13.05	Integration Engineering and Design
	1.05.02	Modeling and simulations		1.08.03	Gaseous source injection systems		1.13.06	Assembly and Installation
	1.05.03	Material acquisition		1.08.04	Tritium calibration system		1.13.07	Interface to Facility
	1.05.04	Outer Cryostat Vessel (OCV)		1.08.05	Nuclear recoil calibration		1.13.08	Onsite safety coordination
	1.05.05	Inner Cryostat Vessel (ICV)	**1.09**	**Electronics, DAQ, and Online Computing**			1.13.09	Rn removal plant
	1.05.06	Cryostat support / suspension (CS)		1.09.01	System Engineering & Management		1.13.10	Counting house
	1.05.07	Ancillaries		1.09.02	TPC front end electronics		1.13.11	UPS system
	1.05.08	Cleaning and plating		1.09.03	Skin front end electronics	**1.14**	**Integrated Testing (early validation)**	
	1.05.09	Host site integration		1.09.04	Neutron detector front end electronics		1.14.01	System Engineering & Management
				1.09.05	Muon detector front end electronics		1.14.02	Grid testing
				1.09.06	Digitizers		1.14.03	HV Feedthrough
				1.09.07	DAQ+DAQ computing		1.14.04	Cryogenics and purification test
				1.09.08	Event builder / trigger			
				1.09.09	PMTs HV system			
				1.09.10	Grids HV			
				1.09.11	Run control			
				1.09.12	Data quality monitor			
				1.09.13	Signal, Network & Power Cables			

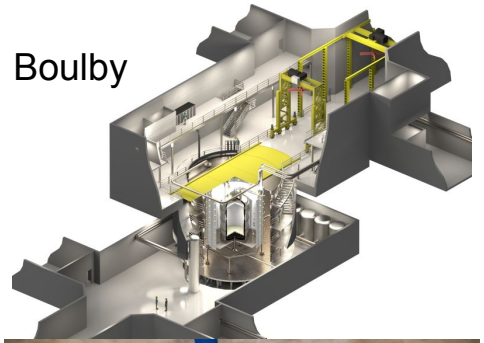
Development of XLZD Project

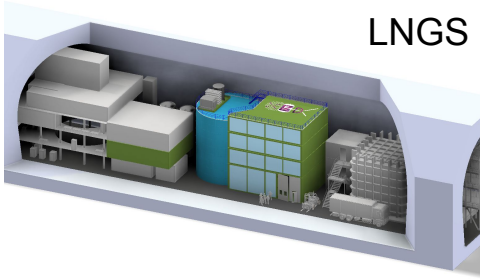
		Conveners	Contributors
1.01	Project Management, Admin & Systems Engineering	n/a	Henrique Araujo (UK), Dan Akerib (US), Kathrin Valerius (DE), Nadine Kurita (US)
1.02	Xe Acquisition	Laura Baudis	Laura Baudis (EU), Dan Akerib (US), Henrique (UK), Markus Steidl (DE/EU), Kaixuan Ni (US)
1.03	Xe Purification & Handling	Carter Hall, Christian Weinheimer	Christian Weinheimer (DE), Guillaume Plante (US), Carter Hall (US), Luca Scotto (FR), Wes Craddock (US), Masaki Yamashita (JP), Theresa Fruth (Aus)
1.04	Cryogenics	Hugh Lippincott, Guillaume Plante	Tom Shutt (US), Hugh Lippincott (US), David Woodward (US), Zhongyin Pan (RAL/UK), Carmen Carmona (US), Guillaume Plante (US), Wes Craddock (US)
1.05	Cryostat	Auke-Pieter "AP" Colijn, Pawel Majewski	Pawel Majewski (UK), Liam Cooper (UK), Adrian Schwenck (DE), Auke-Pieter Colijn (NL)
1.06	Xe Detector	Marc Schumann, Tom Shutt	Tom Shutt (US), Marc Schumann (DE), Kim P (UK), Laura (CH), Uwe Oberlack (DE), Rick Gaitskell (US), Luca Grandi (US), Masaki Yamashita (JP), Jörn Mahlstedt (SE), Aaron Manalaysay (US)
1.07	Outer Detector System	Gabriel Orebi Gann, Sally Shaw	Sergey Burdin (UK), Sally Shaw (UK), Gabriel Orebi Gann (US), Minfang Yeh (US), Scott Haselschwardt (US), Uwe Oberlack (DE), Marco Selvi (IT), Kai Martens (JP), Ryan Wang (US)
1.08	Calibrations	Ranny Budnik	Ranny Budnik (IL), Rick Gaitskell (US), Shengchao Li (CN), Aaron Manalaysay (US), Alvine Kahama (US)
1.09	Electronics, DAQ, and Online Computing	Patrick Decowski, Steffen Luitz	Steffen Luitz (US), David Cussans (UK), Frank Wolfs (US), Patrick Decowski (NL), Marc Schumann (DE), Belina von Krosiqk (DE), Gabriela Carini (US), Alessandro Razeto (IT)
1.10	Controls	Hagar Landsman, Francisco "Chico" Neves	Tomasz Biesiadzinski (US), Francisco "Chico" Neves (PT), Vladimir Solovov (PT), Jens Dopke (UK), Hagar Landsman (IL), Jose "Ze" Matias (PT)
1.11	Computing & Software	Jon Hays, Luca Scotto	Daniela Bauer (UK), Davide Costanzo (UK), Jon Hays (UK), Luca Scotto (FR), Markus Klute (DE),Theresa Fruth (AU), Knut Mora (CH), Luca Grandi (US), Kaixuan Ni (US)
1.12	Screening & Cleanliness	Richard Schnee, Hardy Simgen	Cham Ghag (UK), Amy Cottle (UK), Jim Dobson (UK), Richard Schnee (US), Brianna Mount (US), Hardy Simgen (DE), Andreas Piepke (US), Shingo Kazama (JP), Carter Hall (US), Brian Mong (US)
1.13	Integration & Installation	Terry Benson, Joe O'Dell	Joe O'Dell (UK), Tomasz Biesiadzinski (US), Terry Benson (US), Adrian Schwenck (KIT), Nadine Kurita (US)
			Color code: listed once, listed twice

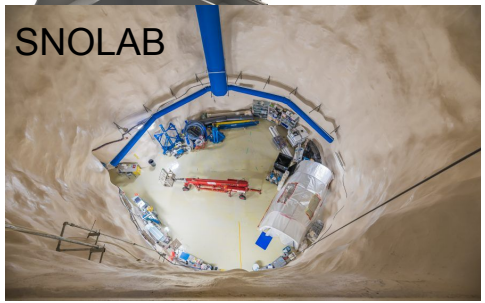
- Groups of contributors should further develop WBS at L4/5 and start cost estimate
- Coverage of countries and expertise
- Not indicative of any scope assignment → conveners only temporary!
- Keep groups as compact as reasonable (but add expertise as needed)

Possible sites for XLZD

- Completing a study of siting options
- Key considerations include
  - Depth - backgrounds, particularly for 0νββ
  - Host site must provide suitably outfitted space compatible with project timeline and separate from project cost
  - Accessibility & transport of large sub-assemblies, vessels
  - Underground fabrication and staging where required
  - Host country impact on overall funding model
- **Key contenders**
  - Boulby - new 1300 meter lab being proposed
  - LNGS - middle of Hall C
  - SNOLAB CryoPit - under evaluation
  - SURF - "Module of Opportunity" cavern or new excavation





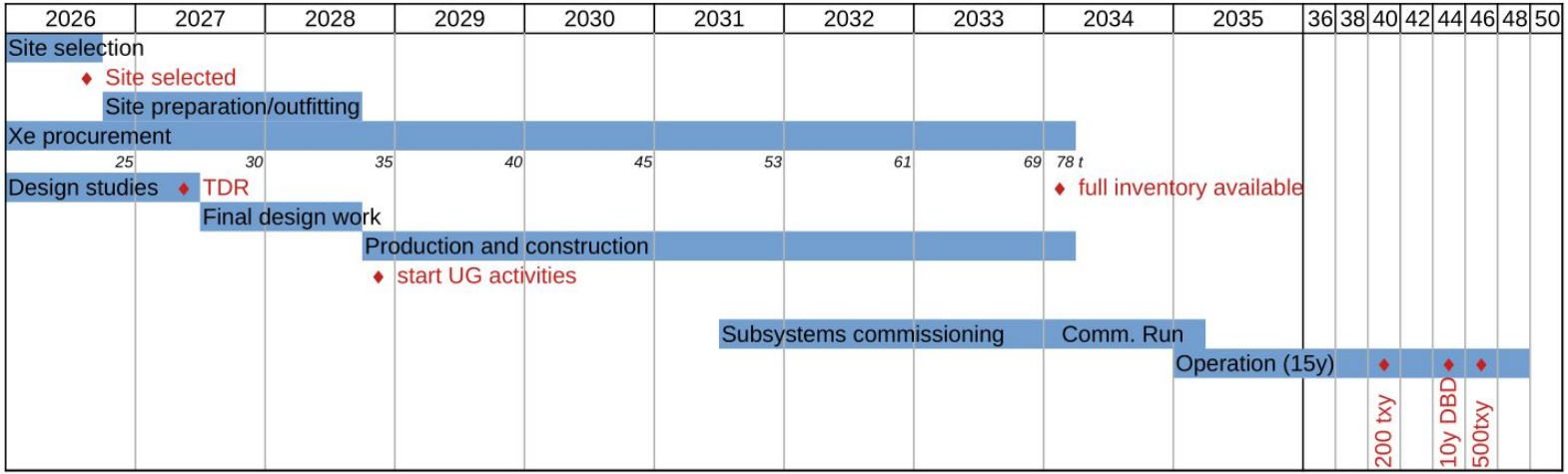


M. Kapust, SDSTA

Detailed reports later

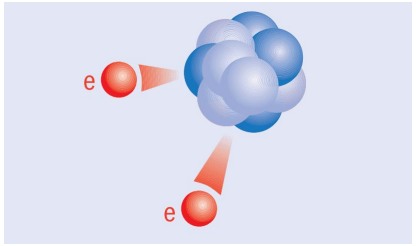
XLZD: Notional Timeline and Cost

- Timeline crucially connected to availability of funding
- Cost (at least partially) connected to siting:
  Site drives some costs but siting might open up funding sources
- Nb: cost for the same experiment varies greatly depending on funding agency
- Following information was given as [input] to the European Strategy Update EPPSU:



- **Cost**: 203 MCHF for XLZD 60t, 250 MCHF for XLZD 80t
  CERN accounting = no VAT, no overhead, no contingency, no personnel

Impact of nEXO pause: churn and opportunity



- Preamble
  - Broad consensus that XLZD should pursue the broadest scientific discovery program → the Observatory concept
  - Maximize 0νββ sensitivity without compromising DM reach
  - Past engagement with nEXO leadership was on combined Xe acquisition (depleted for XLZD!)
  - Challenge in US program: 0νββ is “nuclear physics”, DM is “high energy physics”
- Dec 2024: DOE Nuclear Physics pauses nEXO as a US-led project
  → led to quite intense exchange with (US) nEXO colleagues in spring 2025
- Canadian nEXO groups are pitching a Canadian-led project (nEXO 2.0)
  → financial challenge. Best-case schedule is similar science start as XLZD
- SNOLAB is looking to ensure a flagship project → actively re-engaged with XLZD
- Opportunity for nEXO scientists in the US to pursue 0νββ in XLZD if NP supports it: should be competitive (interpretation: ~10^{28} y or ~LEGEND)
- Opportunity for Canadian teams to join XLZD with goal of siting at SNOLAB
- Both opportunities could bring substantial resources
- First nEXO US-scientists asked to join XLZD
- Still some churn in the community as nEXO 2.0 plays out

Discussion on 0νββ on Wednesday

Xenon acquisition developments

- Procurement of xenon target drives construction costs and timeline
  (~2/3 of construction costs is for Xe gas)
- XLZD has access to 20 t
  (10t of LZ not yet owned by collaboration)
- Xe procurement foresees ≥5t/y
- Expectation: each country contributes Xe gas according to its scope fraction
- We are in contact with large rare gas producers
  - delivering 5 t/y is possible even for single producers
  - coordinated procurement preferred
  - Xe market back to normal
- **Meeting with Linde reps today**
  Meeting with Air Liquide already happened (NDA)

This meeting

Focus on general project rather than individual R&D →poster session

We want that you interact, discuss and brainstorm!

Speakers: please allow for plenty of discussion time:

- 30' = 20' talk + 10' discussion
- 20' = 13' talk + 7' discussion
- 15' = 10' talk + 5' discussion
- 10' = 6' update + 4' discussion

Two breakout sessions

	Mon 30.06.		Tue 01.07.		Wed 02.07.	
9:00	*Registration*		Science	Session chair: Schuman	Photosensors	Session chair: Palladino
	Registration		WG1: Science&Sensitivity (15')	Pollmann	PMTs+SiPMs (40')	Baudis, Yamashita,
	Registration	Session chair: Baudis	Requirements TF (15')	Tovey		Kazama
9:30	Welcome (10')	Selvi	Ongoing studies: DM (45')	Moraa, James,	SPADs (20')	Fischer
	Status XLZD	Akerib, Schumann		Doerenkamp		
10:00					Cold electronics	
			Ongoing studies;: 0vbb (15')	Lindote	LNGS (15')	Razeto
	Updates: IB Chair (10')	Hall			SLAC (15')	A. Wang
10:30	Simulations/Software TF (10')	Ni, Fruth, Gao	"Uncontroversial" Design Topics	Shutt	Single electrons, photons	Pollmann, Wang
	Detector WG (10')	Shutt, Mahlstedt				
	Siting TF (10')	Lippincott, Selvi	A Design Idea (10')	Budnik		
11:00	*Coffee*	Session chair: Decowski	*Coffee*		*Coffee + Posters*	
11:30	XLZD@Boulby	Araujo	Breakout session I		Poster Session	
			LXe Detector	Tom, Marc		
			Cryostat and Outer Detectors	Pawel, Gabriel		
12:00	XLZD@LNGS	Selvi	Cryogenics, Purification	Hugh, Carter, Christian	Breakout Session II	
			DAQ, Slow Cntrl, Computing	Patrick, Hagar, Luca	LXe Detector	Tom, Marc
					Cryostat and Outer Detectors	Pawel, Gabriel
12:30	XLZD@SURF	Shutt			Cryogenics, Purification	Hugh, Carter, Christian
					Screening, Calibration	Hardy, Ranny
			Summary Breakout Session I	Session chair: Akerib		
13:00	XLZD@SNOLAB	Lippincott	4x 10 mins			
13:30	*Lunch*	Session chair: Valerius	*Lunch*	Session chair: Araujo	*Lunch*	
14:30	Siting (discussion)	Discussion leader: Valerius	Cryogenic Distillation XLZD (20')	Münster	Summary Breakout Session II	Session chair: Yamashita
					4x 10 mins	
			Large Test platforms			
15:00	Engineering framework	O'Dell	Xenoscope (15')	Zurich		
			PANCAKE (15')	Freiburg	R&D Requirements (discussion)	Discussion leader: Yamashita
	Cryostat studies	Majewski	XMASS (15')	Yamashita		
15:30			LNTF (15')	Biesiadzinski		
	Xenon Acquisition	Baudis	Mainz (15')	Deisting	Radiopurity & Screening	Dobson
16:00	Coffee		LNGS Director (10')	chair: Selvi	Coffee	
			Coffee			
						Session chair: Lippincott
16:30	UG Visit I	16:30	UG Visit II	16:30	Computing	Bauer
				16:50	Environmental Sustainability (20')	Kaboth
				17:10	0vbb in XLZD (discussion, 30')	Discussion leader: Lippincott
		19:30	*Dinner*	17:40	Conclusion (5')	Akerib, Schumann
				17:45	*End*	

Breakout sessions

- Chaired by WBS L2 convenors
- Get to know your colleagues
- **Brainstorm, discuss, interact, engage**
- Identify (un)controversial topics, needs for R&D, etc.
- You can change the session on the second day (but you don't have to)

- **Room assignments:**
  LXe Detector – Fermi
  Cryostat+OD – Majorana (5' walk)
  Cryogenics, Purification – Pontecorvo
  DAQ, Screening etc – Rossi
- We want discussion
  →apologies if ZOOM participation is hard

Breakout session I	**Breakout session II**
LXe Detector	LXe Detector
Cryostat and Outer Detectors	Cryostat and Outer Detectors
Cryogenics, Purification	Cryogenics, Purification
DAQ, Slow Cntrl, Computing	Screening, Calibration
Summary Breakout Session I	Summary Breakout Session I
4x 10 mins	4x 10 mins

Poster Session: 24 posters covering very diverse topics

Name	Institution	Title
Biondi	KIT	MOTION, a liquid xenon time projection chamber platform for high voltage development
Byrne	STFC - RAL	Overcoming the Build Challenges of the XLZD Experiment Tank at Boulby
Dastgiri	UCL	UK Radiopurity Assaying Facilities and Programs
Deisting	Mainz	Electrode characterisation at Mainz: Sagging measurements and defect searches using Corona discharges
Di Donato	l'Aquila	R&D on innovative transparent electrodes for XLZD.
Elykov	KIT	Electrode R&D for XLZD
Gaitskell	Brown	LZ PMT Performance
Hughes	Liverpool	Preliminary simulations of the XLZD Outer Detector
Jones	STFC	XLZD @ Boulby : Stage 2 Assembly Integration
Kaboth	RHUL	Environmental Sustainability for XLZD
Kharbanda	Nikhef	Investigating photoluminescence as a source of instrumental backgrounds in xenon TPCs
Knights	Birmingham	High-purity copper electroformation and electrodeposition for background suppression
Majewski	RAL	XLZD@Boulby Cryostat
Mannino	LLNL	Detector R&D at LLNL
Marley	Imperial	Optical ray tracing simulations in the XLZD skin
Matheson	RHUL	Preliminary WIMP Sensitivity Studies For XLZD
Miyata	Nagoya	Development of Hermetic Xenon Detector for XLZD
Mong	SLAC	Ultra Sensitive Radon Assay at SLAC
Roy	Imperial	Flex-cable readout for XLZD Skin Detector and beyond
Uson	Edinburgh	OD Light Collection Efficiency simulation studies
Woodford	Edinburgh	XLZD Outer Detector: Neutron Veto Efficiency
Pompa	Subatech	Searching for low-mass WIMPs with Migdal
Mong	SLAC	Ultra-sensitive radon assay using an electrostatic chamber in a recirculating system
Weerman	Nikhef	Xenon spallation in XLZD

Poster session Wed morning.
On display all days.

We are looking forward to a fruitful and effective meeting!

	Mon 30.06.		Tue 01.07.		Wed 02.07.	
9:00	*Registration*		Science	Session chair: Schuman	Photosensors	Session chair: Palladino
	Registration		WG1: Science&Sensitivity (15')	Pollmann	PMTs+SiPMs (40')	Baudis, Yamashita,
	Registration	Session chair: Baudis	Requirements TF (15')	Tovey		Kazama
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