

# Activities of the local XENON - DARWIN - XLZD group

Atul Prajapati



XENON



UNIVERSITÀ  
DEGLI STUDI  
DELL'AQUILA



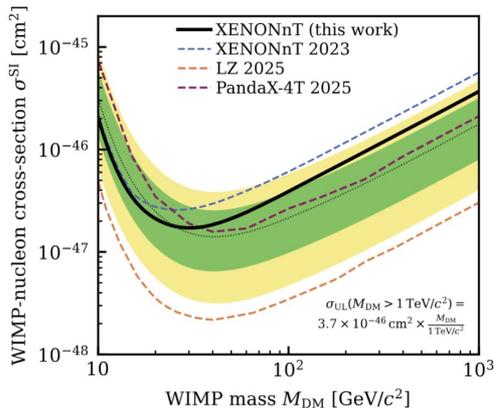
Astroparticle Science Fair- February 12<sup>th</sup> 2026



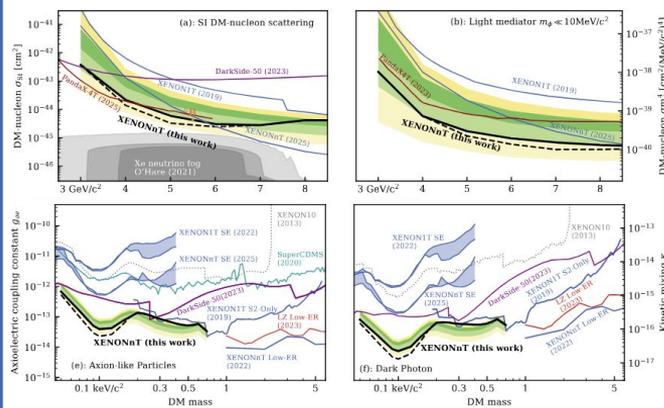
# Latest Results



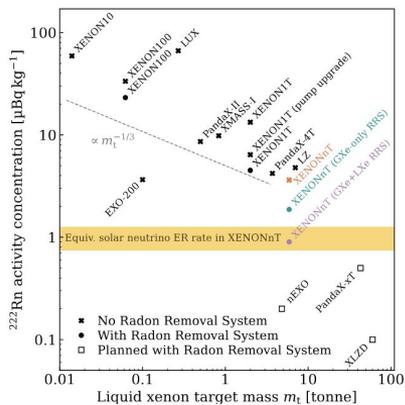
## Limit on WIMP direct search:



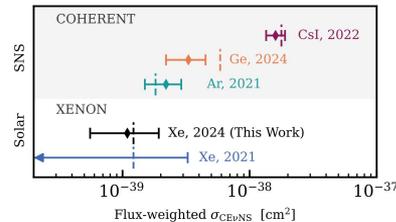
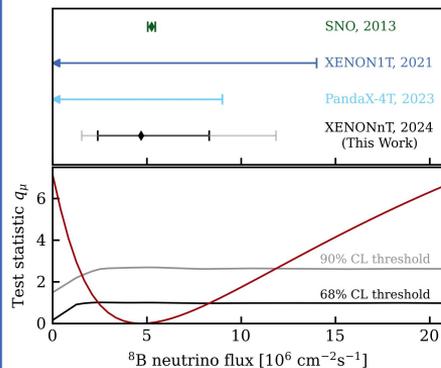
## Limits on new physics:



## Lower ER background in the field:



## First contact with the neutrino floor:

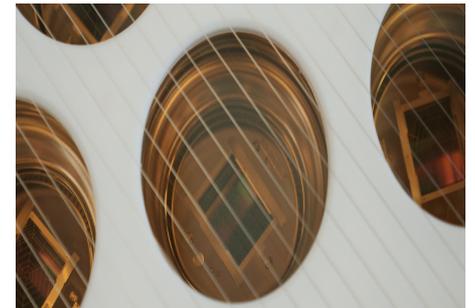


# Local activities



- **Analysis:**
  - WIMP analysis
  - New physics channels
  - Detector response modelling
  - Machine Learning
- **R&D towards next generation:**
  - New electrodes
  - Photosensor
  - Wavelength shifter
- **On site detector activities:**
  - Calibration
  - Cryogenic operations
  - Background reduction

Joining the local XENON group you will have the chance to have a complete training on experimental physics, going from bare hands activities to high level analysis



# The group



UNIVERSITÀ DEGLI STUDI DELL'AQUILA

DSFC  
Dipartimento di Scienze Fisiche e Chimiche

INFN  
LNGS

GRAN SASSO SCIENCE INSTITUTE  
SCHOOL OF ADVANCED STUDIES  
Scienze Universitarie Superiori

UNIVERSITY OF LAQUILA - LNGS  
XENON GROUP

Chiara Di Donato  
PhD student,  
Analysis R&D

Carla Macolino  
Professor,  
Electrodes Speaker bureau

Alfredo D. Ferella  
Professor, PI  
Purification

Walter Fulgione  
Senior scientist, PI  
"Retired"

Atul Ashok Proajapati  
Post-doc, RC  
Analysis

Marco D'Antonio  
Master student,  
Analysis

Francesco Pompa  
PhD student,  
Neutron Detector

Cecilia Ferrari  
PhD @ GSSI,  
Analysis

Riccardo Biondi  
Researcher TC  
Purification Cryogenics

Mattia Teruzzi  
Technician,  
Detector operations

Valerio D'Andrea  
Scientist,  
Purification Analysis

Alessandro Razeto  
Senior scientist,  
DAQ Analysis R&D

Federico Alfonsetti  
Technician,  
Detector operations

Marcello Messina  
Senior scientist, PI

# Contacts



If you are interest or you have questions or curiosities you can contact us writing at:

1. [alfredodavide.ferella@univaq.it](mailto:alfredodavide.ferella@univaq.it)
2. [riccardo.biondi@gssi.it](mailto:riccardo.biondi@gssi.it)
3. [atulashok.prajapati@univaq.it](mailto:atulashok.prajapati@univaq.it)

Online resources:

-  [Xenonexperiment.org](http://Xenonexperiment.org)
-  [Xenon\\_experiment](https://www.instagram.com/Xenon_experiment)
-  [XENONexperiment](https://twitter.com/XENONexperiment)
-  [XENONexperiment](https://www.facebook.com/XENONexperiment)

