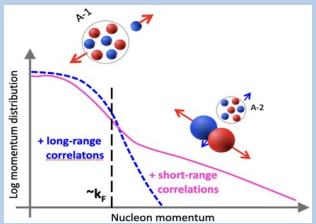
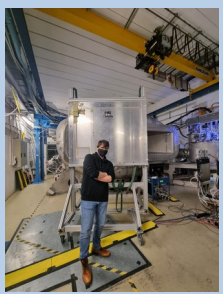
NUC-RIA Plans 2025

Physics @ R3B

- Finish analysis on **SRCs** on exotic nuclei (PhD Thesis **M. Xarepe**)



- **Light ion** measurement using tRPCs: experiment **S249** (M.Sc. Thesis **P. Copeto**)



- Preparations for 2026 campaign: $^{3}_{\Lambda}H$

Nuclear Astrophysics

Nuclear Reactions

HIE-ISOLDE @ CERN

- ★ Grant Application for **ISRS** ISOLDE-CERN
- ★ Experiment preparations at **INFN/LNS** (2025/26)
- ★ Target developments: **fundamental** and **applied** sciences

EURO-LABS

Explosive Modelling

- **r-process nuclei** production in Kilonovae
- ★ **Atomic parameters** for non-LTE modeling
- ★ **PhD and M.Sc. Thesis** ongoing
- Explosive **nuclear reaction network** studies (collaboration with Konkoly Observatory, Budapest)

NUC-RIA Activities 2025

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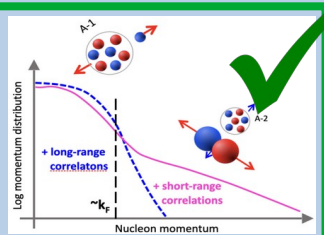

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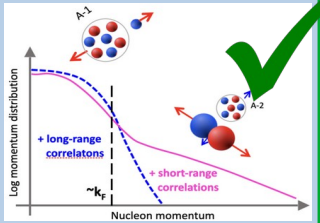

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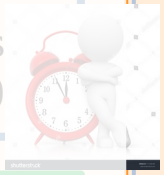

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EURO-LABS

Explosive Modelling

- **r-process nuclei** production in Kilonovae

SPARKLE

- ★ **Atomic parameters** for non-LTE modeling
- ★ **PhD and M.Sc. Thesis** ongoing

- Explosive **nuclear reaction network** studies (collaboration with Konkoly Observatory, Budapest)

NUC-RIA People 2025

Senior

D. Galaviz

L. Peralta

J. Sampaio

J. M. Pires Marques

P. Teubig

P. Velho

Ph.D.

R. F. Silva

F. Afonso

M. Xarepe

C. Coelho

F. Barba

J. Graça

J. A. Jantarada

M.Sc.

R. Pires

T. Campante

M. Paulino

R. Nunes

C. Felgueiras

A. Vicente

L. Leitão

P. Copeto

D. Garcia

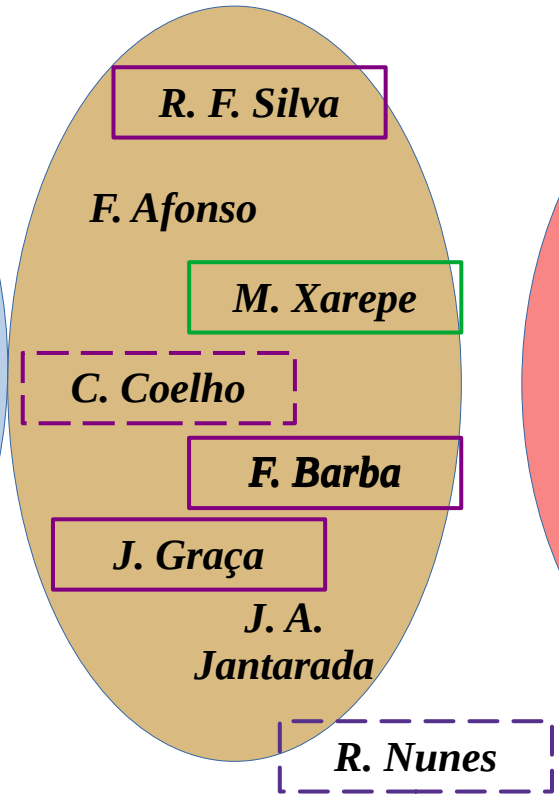
B.Sc.

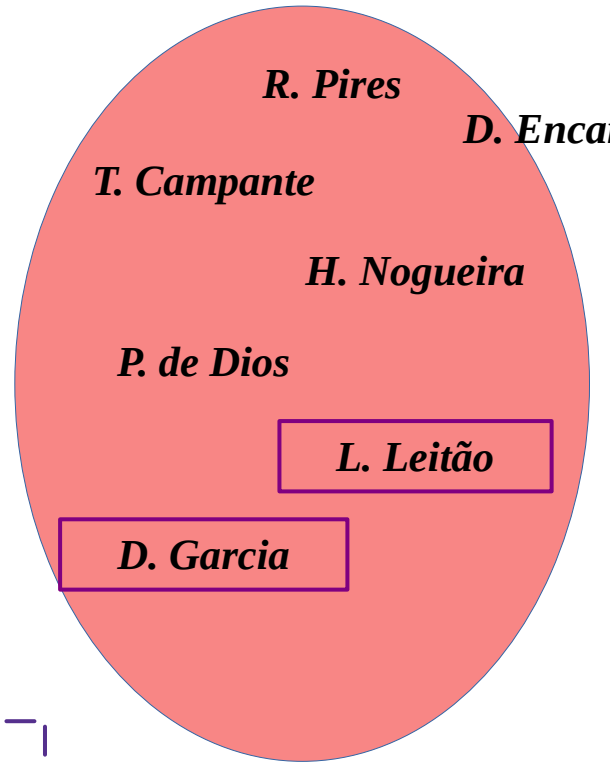
D. Encarnação

+

5-7 LIP Summer Students

NUC-RIA People 2026



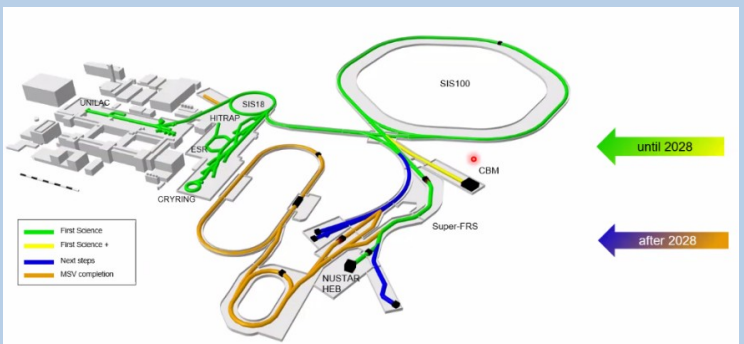


NUC-RIA Plans 2026

Physics @ R3B

- Preparations for 2026 campaign: $^{3}_{\Lambda}H$

- Integration of **RPC** in High Energy Cave



Nuclear Astrophysics

Nuclear Reactions

HIE-ISOLDE @ CERN

- ★ PhD Grant Application ISOLDE-CERN
- ★ **INFN/LNS** Experiment

- ★ **ASER3HE** Project (n-RPCs @ CNA-Seville)
- ★ Target developments: **fundamental** and **applied** sciences

EURO-LABS

SPARKLE Phase 2

- **Atomic database** in **production** mode
- ★ **Integration for** non-LTE simulations
- ★ **Project** funding (~250 k€) submitted

- Explosive **nuclear reaction network** studies (collaboration with Konkoly Observatory, Budapest)

NUC-RIA SWOT

Strength

- Strong **international collaboration** experience.
- Expertise in instrumentation, data analysis, particle transport simulations, and nuclear astrophysics.
- Proven track record of participation in **experiments** at various radioactive and stable beam accelerator institutes.
- Combination of experimental and theoretical work

Opportunities

- International participation offers visibility and potential to attract **young researchers**.
- Opportunities to expand current collaborations to other institutes.
- Participation in **International Networks** (EUROLabs, ChETEC-Infra, IANNA,...) offers growth opportunities.

Weaknesses

- **Limited funding**, which may prevent the group from effectively contribute to the construction of new detection systems in international collaborations.
- **Limited** number of **senior researchers**, with strong teaching commitments.
- Lack of postdoctoral researchers in the group

Threats

- Inability to effectively participate in next-generation facilities like **FAIR** or **ISOLDE** may endanger future involvement.
- Lack of funding may be an obstacle to student retention and recruitment of senior researchers, hindering group growth and sustainability.