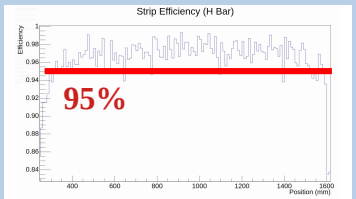
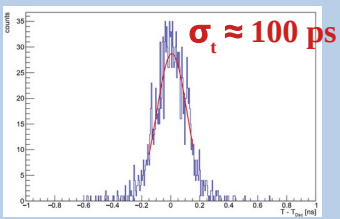
# NUC-RIA Activities 2022

## Short-Range Correlations @ R³B

- Experiment **S522 (**SRCs on $^{16}$C and $^{12}$C**)** **succesfully executed!**



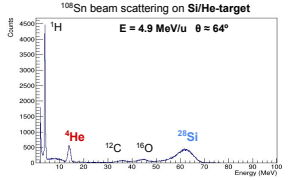

- ★ RPC calibration and of **SRC Data analysis (**M. Xarepe's PhD)
- ★ **CALIFA** calibration with **cosmic** rays **(**M.Sc. T. Sousa)
- ★ Insert RPC in the present **R³B standard setup**
- ★ Consolidation of **LIP** within the **R³B** collaboration at **FAIR**

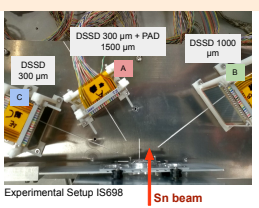
## Nuclear Astrophysics

### Nuclear Reactions

HIE-ISOLDE @ CERN

- ★ **IS698** Exp. **scheduled** and **executed.**
- ★ Data analysis started **(**F.G. Barba's **PhD grant)**




- ★ **Furhter work on** (p,γ) reactions (M.Sc. R. Pires)

### Explosive Modelling

- ★ FCT project **ATOMIK** **approved**!
- ★ R. F. Silva's **Ph.D started**
- ★ **Nuclear data impact** studies for *N.A.* (M.Sc. A. Jantarada)

Joinned Target Working group


EURO-LABS

# 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 EUROLabs, ChETEC-Infra, and a potential COST action in Nuclear Astrophysics 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.