

Ganil TF: e-RI

Adrien Matta for the working group

Ganil Task Force kick-off meeting,
10th September 2020



Document goals: our understanding

Points to be made

- I an outstanding physics case exist
- II that could be reach with a conceptual machine design
- III which is realistic in terms of cost, time, and manpower

Strategy

- I build on existing study in stable nuclei
- II build on existing objects + internal study/simulation
- III review cost and time of completion of existing objects

Process

- lay groundwork for futur collaboration and working groups
- select a few international experts to discuss technical solution
- build momentum within the e-RI international community

Document layout

Proposed table of content

- I Introduction
- II Generic physics case
- III Radioactive isotopes production
- IV SCRIT and ERL
- V Spectrometer and detection
- VI Grand Accélérateur National d'Ions Lourds et Lepton (GANIL²)
- VII ERL scientific, medical and ind. applications

Document layout

I Introduction

- Scope
- History

- Give context
- Recall major achievements

Freddy Flavigny, Valérie Lapoux

II Generic physics case

- Observables
- Available theories and models

- Detail what we want to measure
- Explicit the type of experiment required
- Open discussion on theory needs

Valérie Lapoux, Freddy Flavigny, Vittorio Soma, Alexandre Obertelli, Adrien Matta

Document layout

III Radioactive isotopes production

- SPIRAL 1
- LINAG
- Photo-fission

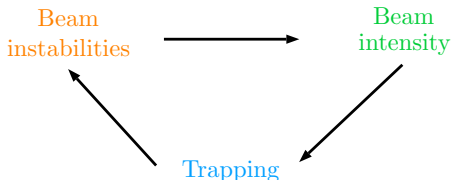
- Established realistic rates
- Discuss radio-protection issues
- SP2-PH2 / ALTO

Pierre Delahaye, David Verney, Hanna Franberg, Xavier Hulin

Document layout

IV SCRIT and ERL

- Existing traps
- Existing ERL
- Projected improvement



Antoine Chancé, Walid Kaabi, Pierre Delahaye, Aamna Khan (tbc)

V Spectrometers and detection

- Electrons spectrometer
- Proton spectrometer
- Heavy-ions spectrometer

- Establish specs.
- Assess size and cost
- Normal or supra?

Adrien Matta + DASM specialist?

Document layout

IV SCRIT and ERL

- Existing traps
- Existing ERL
- Projected improvement

- ERL vs Synchrotron
- ETIC and PERLE
- multi-turn / multi-arc
- Trapping eff. / injection
- Lifetime limitation

Antoine Chancé, Walid Kaabi, Pierre Delahaye, Aamna Khan (tbc)

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Document layout

VI GANIL²

- Layout of the installation
- Day 1 physics case (L29)
- Day 2 physics case (L31)

- Outline possible installation
- Building specs./ Implentation
- Experiments based on Luminosity

People involved to be discussed

VII ERL scientific, medical and industrial applications

- Flash therapy
- Isotope production at beam dump
- FEL

Samuel Salvador

Perspectives

What's next?

- Completion of the document before Christsmas
 - When does the commity give feedback?
 - To whom? Where do we go from there?

Ideal world: positive feedback

- Start right away a proper CDR for late 2021
 - Requirement in man-power to be established
 - Commitment by the tutelles
- Start right away a white paper on R&D strategy
 - Engage with the main tutelles (CEA,IN2P3)
 - Involve international partners (TU Darmstadt,GSI,KU Leven,...)