



# EMILIE: Perspectives



# EMILIE debuncher: Summary and future plans

- **EMILIE debuncher status**
  - EBIS debuncher has produced first results
    - 6-7 ms pulse without much optimization
    - 30% - 50% efficiency
- **Next steps**
  - Further voltage and timing optimizations
    - Flattening the debunched beam
    - Better efficiencies
  - Observation of pulses over longer times (up to 100ms)
    - Data acquisition allowing the single ion detection
    - Defining the injected bunches with a pulsed deflector (removal of the overshoot)
  - Mimicking the EBIS pulses
    - Energy dispersion
      - Adding a RF voltage on top of the EBIS debuncher voltage
        - » No effect for 7V, what happens for higher voltages
- **Future plans**
  - Tests with multiply charged ions at GANIL in 2016
  - Possible tests with TWIN EBIS at ISOLDE

Within ENSAR 2!



## ECR charge breeding: Future R&D within EMILIE

- **Investigation of the confinement times**
  - for different gas mixing
  - As a function of the incoming current
    - observed confinement influenced by the potential dip change?
- **Reproducibility – magnetic configuration**
  - New iron plug in the LPSC source
  - New hexapole
- **X rays as plasma diagnostics**
  - Instabilities in ECR charge breeders
  - Other ideas
- **Testing the charge breeding with new 1+ sources**
  - charge state dependance of the capture
- **Numerical simulation**
  - Investigating the effect of different support gases on the capture efficiency
- **Improvements in the HIL test bench**
  - Installation of an oven? Efficiency measurements?



## Pursuing in future collaborations

- ICBT within ENSAR 2
- TNA access within ENSAR 2?
- LEA Colligua / COPIN etc.
- Other ideas?