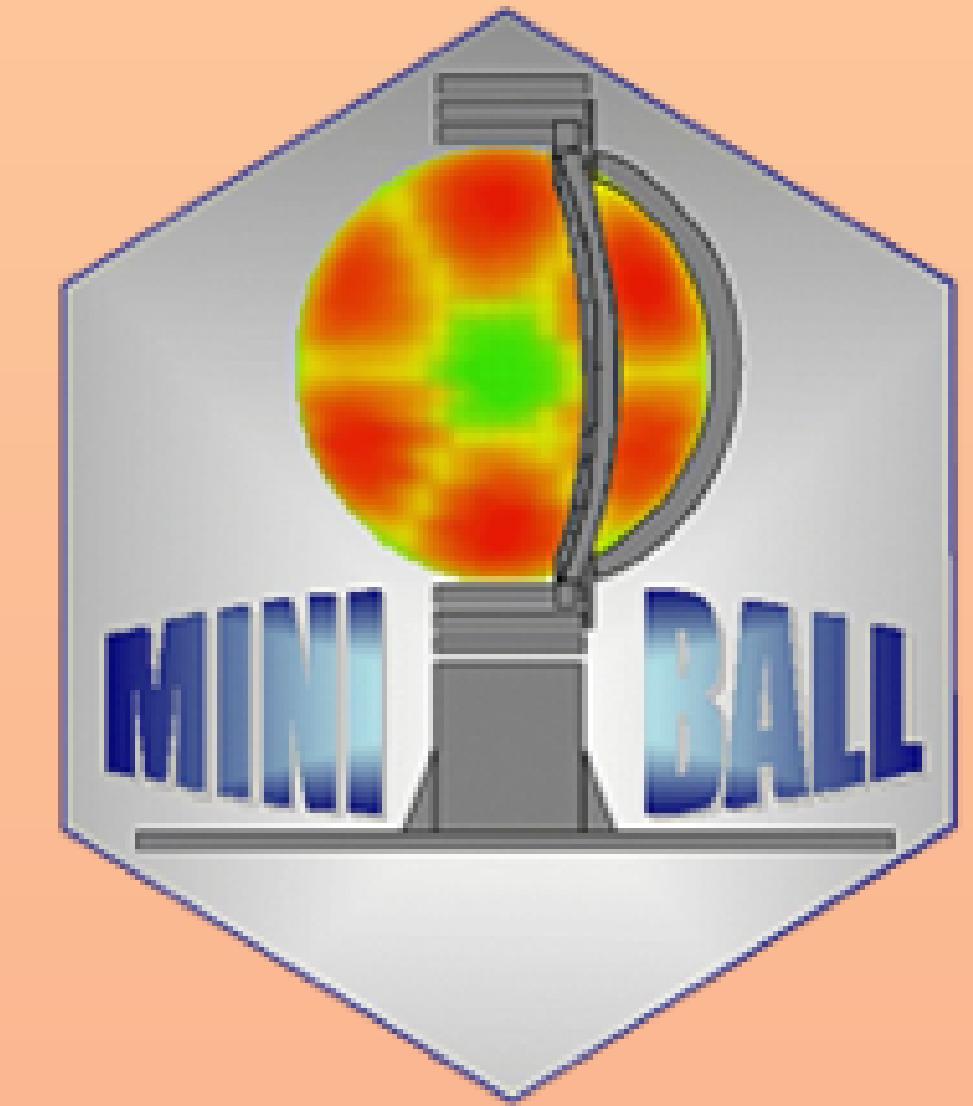
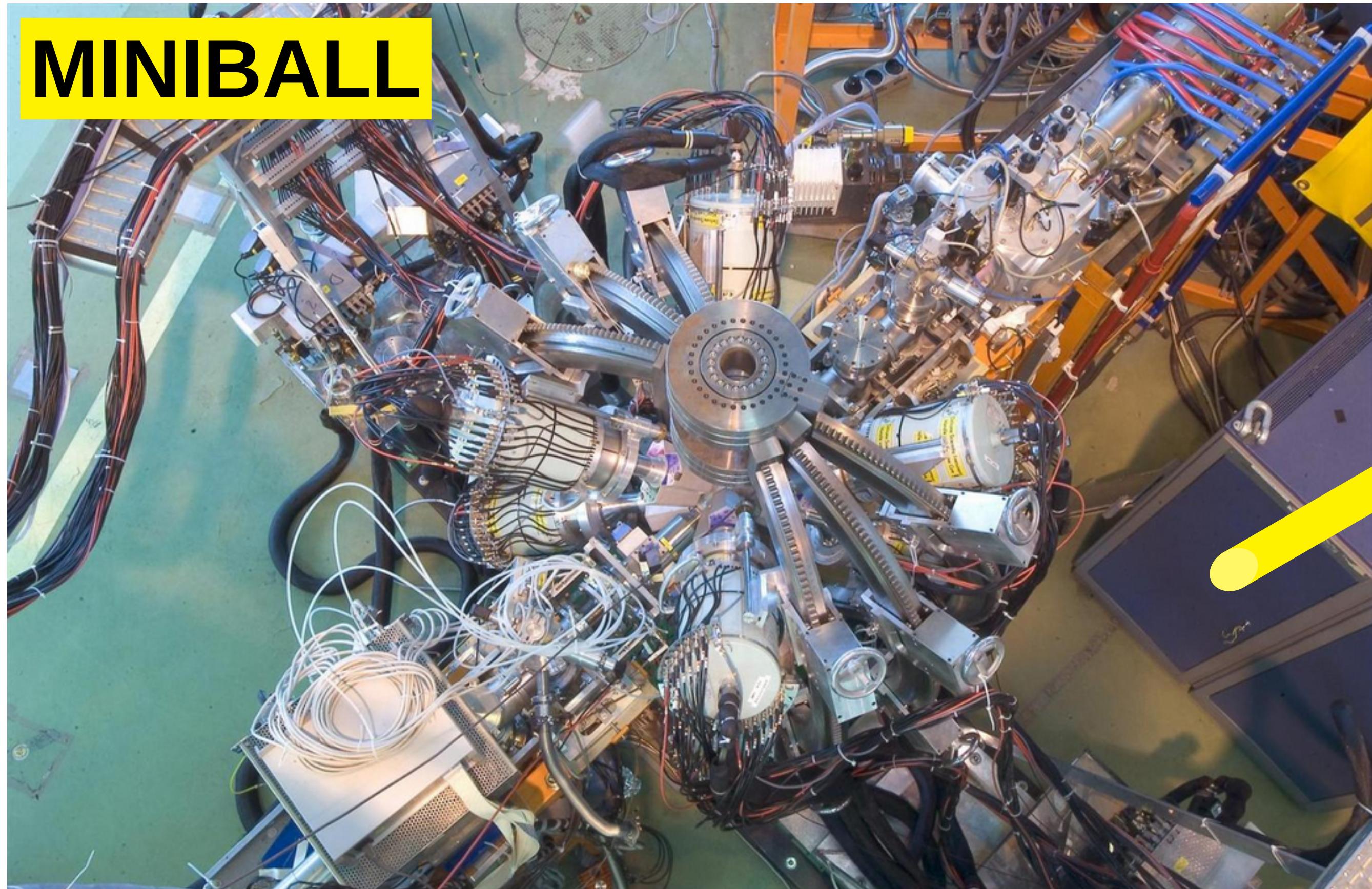


MINIBALL

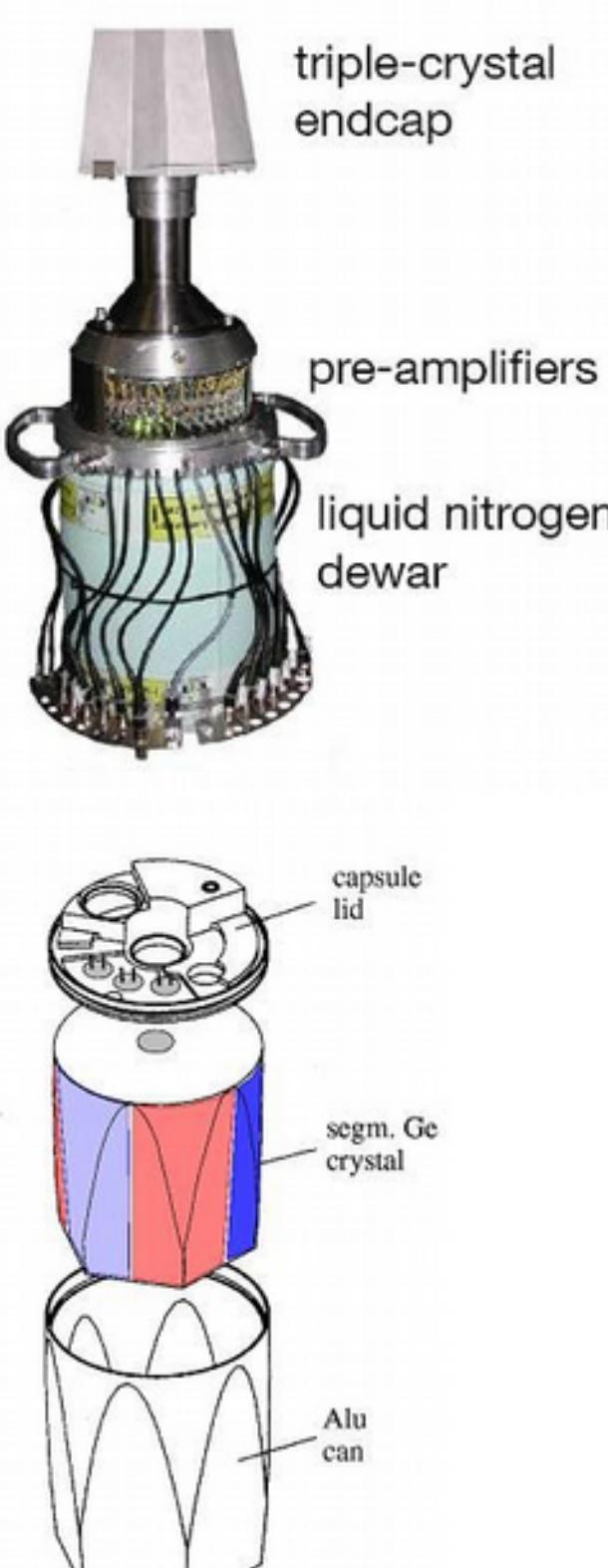
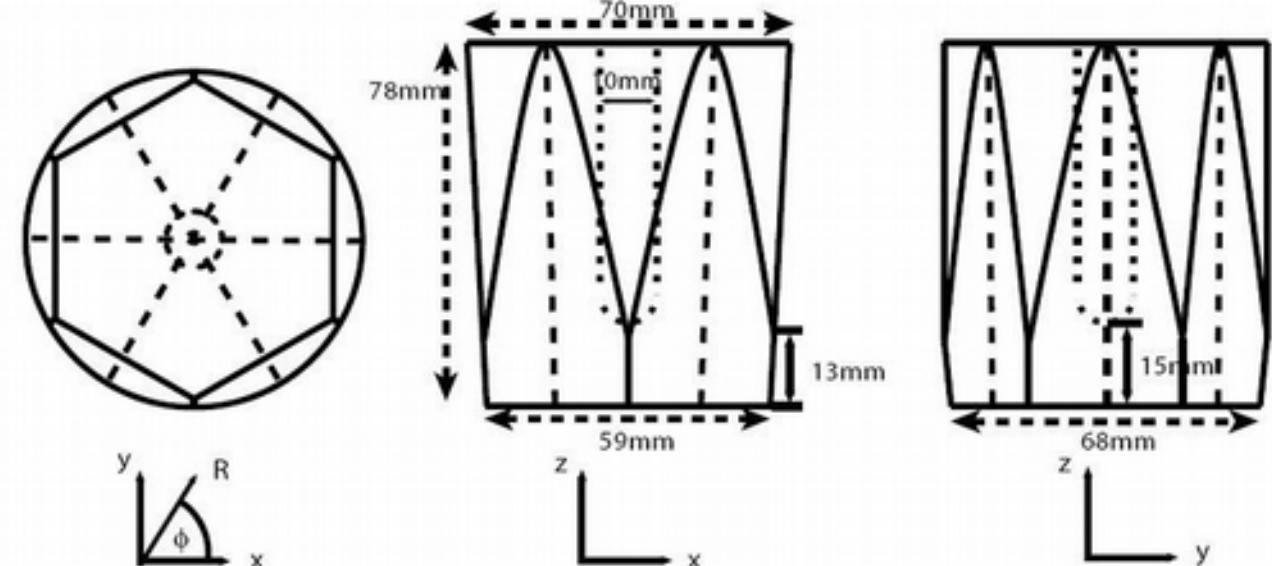
- versatile HPGe array for experiments with post-accelerated RIBs at ISOLDE



Thorsten Kröll (TU Darmstadt) for the MINIBALL collaboration

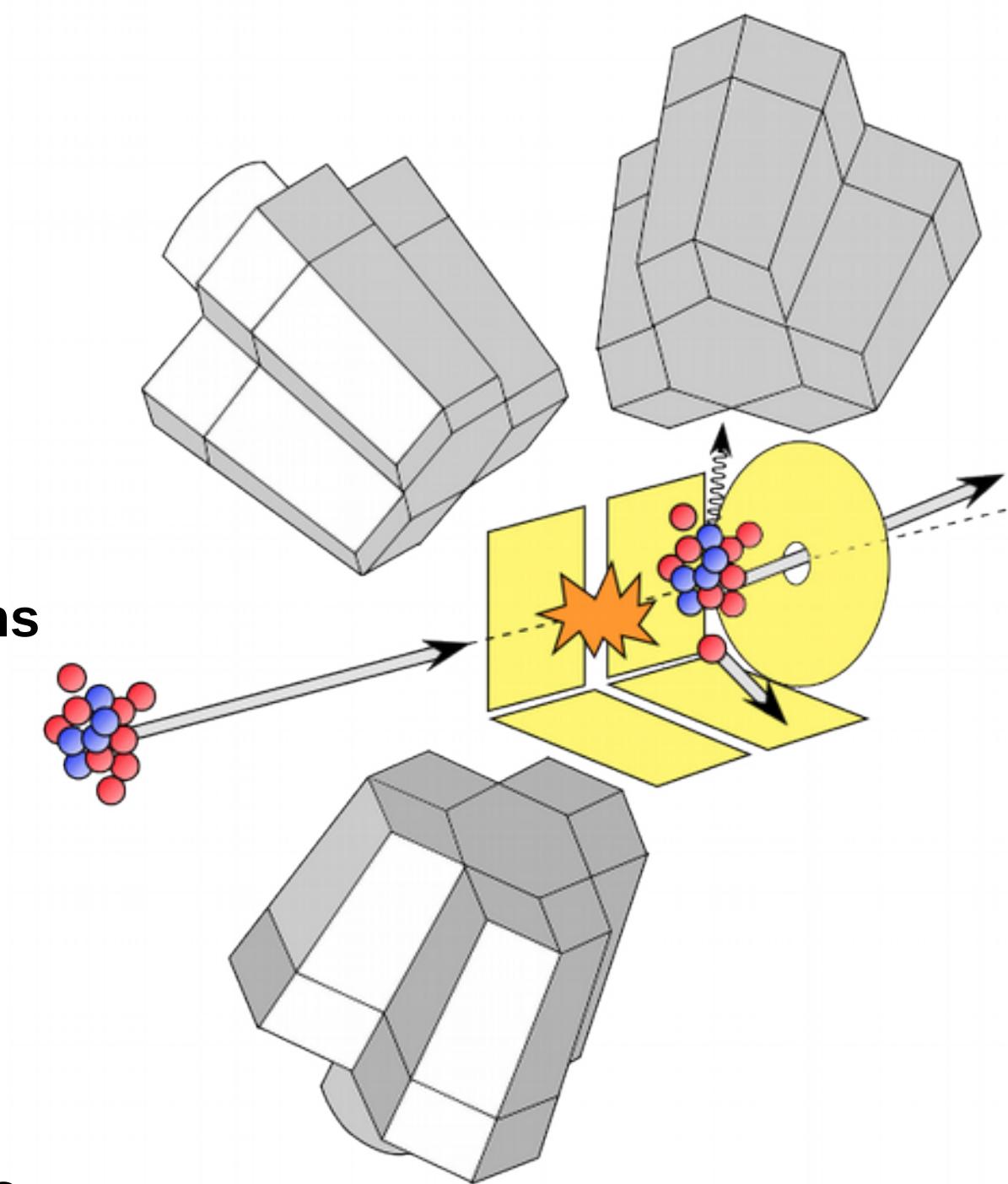


- 24 individually encapsulated HPGe detectors arranged in 8 triple clusters
 - $\epsilon > 7\%$ for 1.3MeV γ -rays
 - 6-fold segmented
 - fully digital electronics
 - ... operated since 2002 at ISOLDE
- N. Warr et al., EPJA 49, 40 (2013)



Physics menu

- Nuclear structure of exotic nuclei
- single-particle properties
- collective properties
- ... nuclear shapes



Methods:

- Coulomb excitation
- nucleon transfer reactions

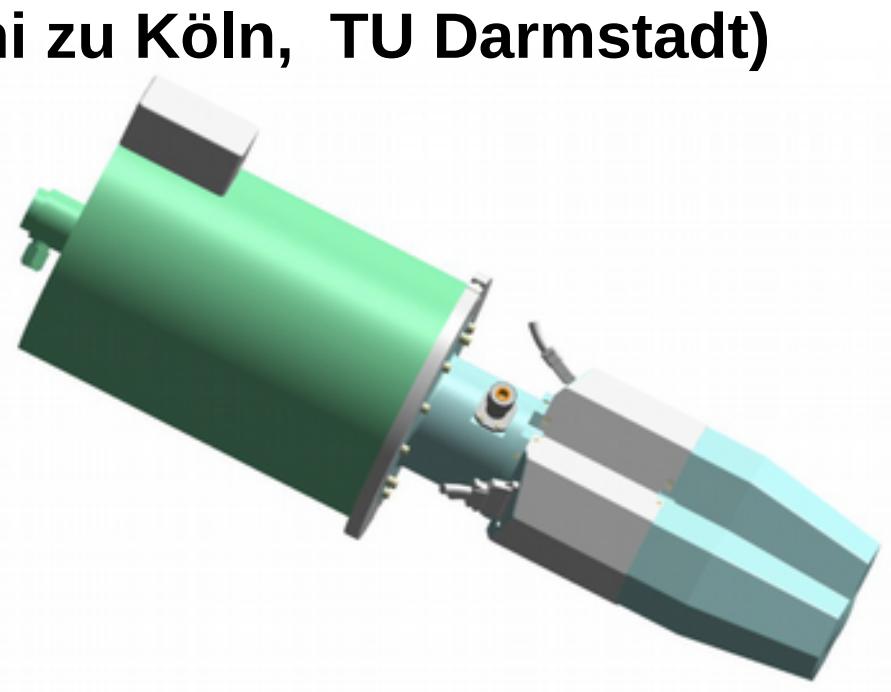
Observables:

- excitation energies
- level schemes
- spin/parity assignments
- em. transition probabilities
- em. moments
- spectroscopic factors

MINIBALL upgrades

New cryostats

(Uni zu Köln, TU Darmstadt)



MINIBALL AC shields

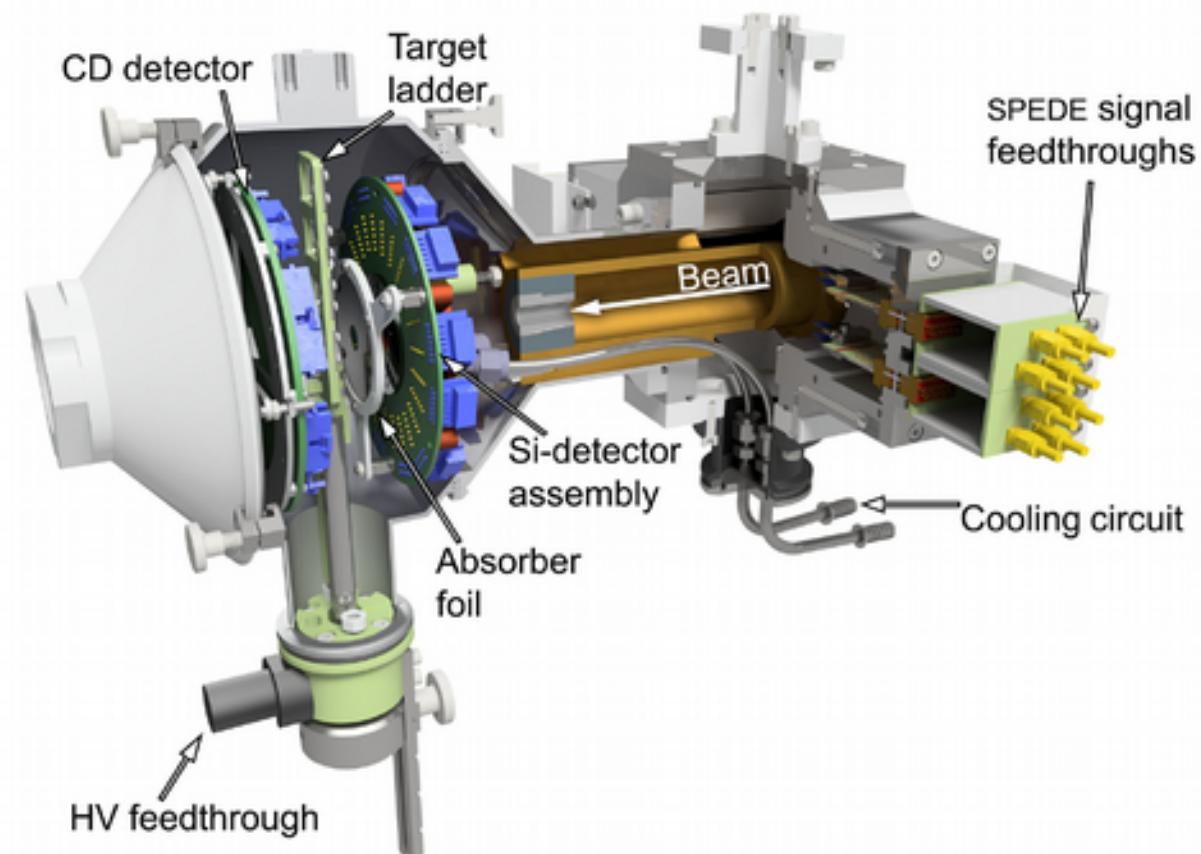
(IPN Orsay, Uni zu Köln)



© CTT – Dr. Heinz-Georg Thomas



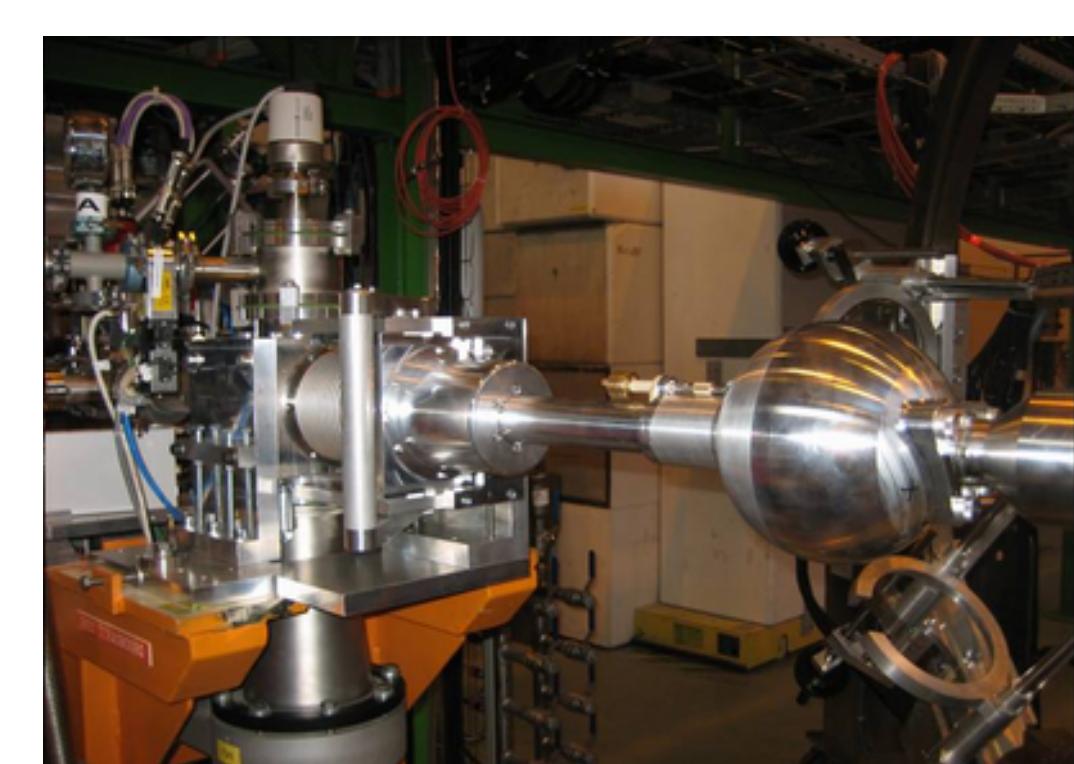
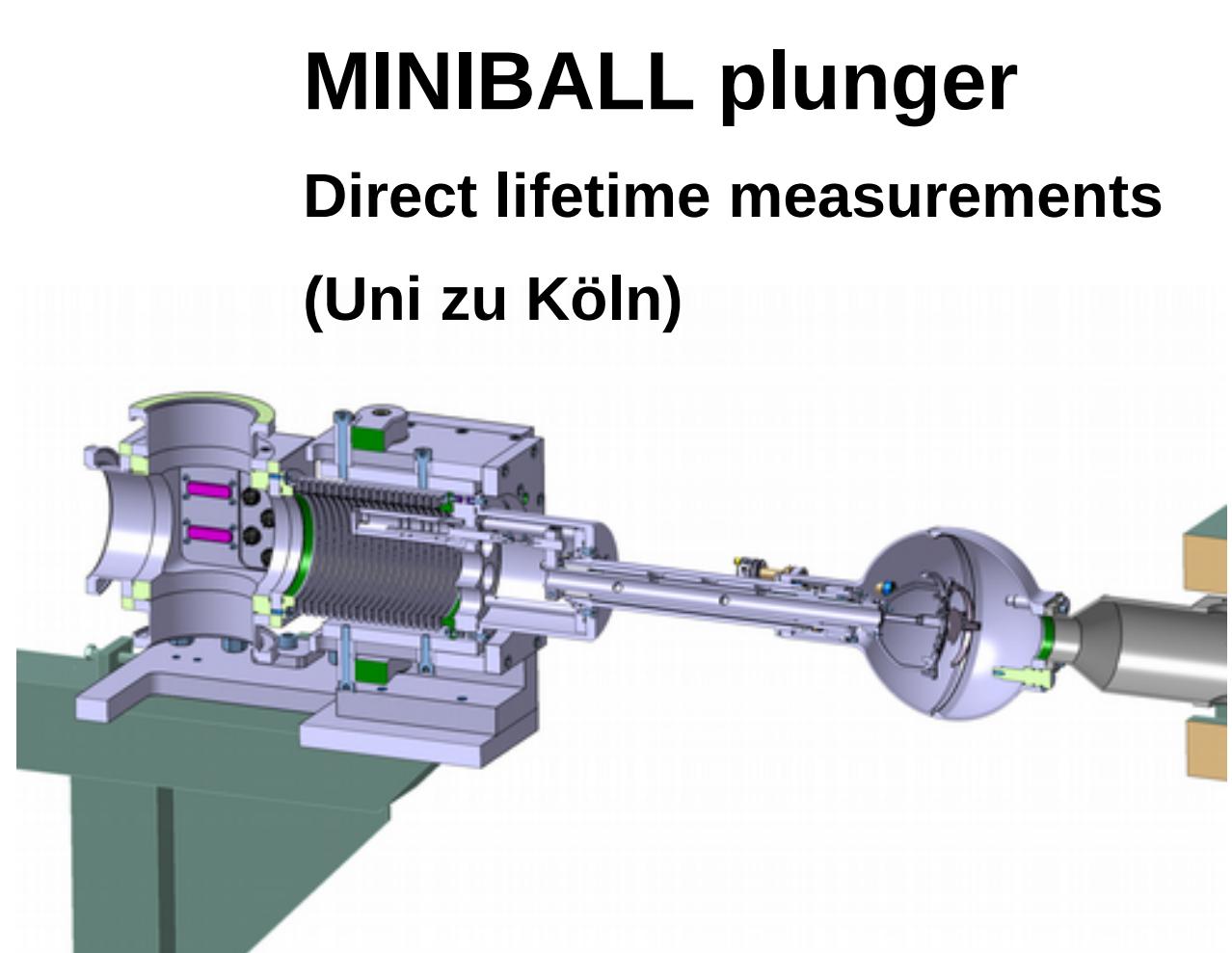
New MINIBALL ancillary devices



SPEDE

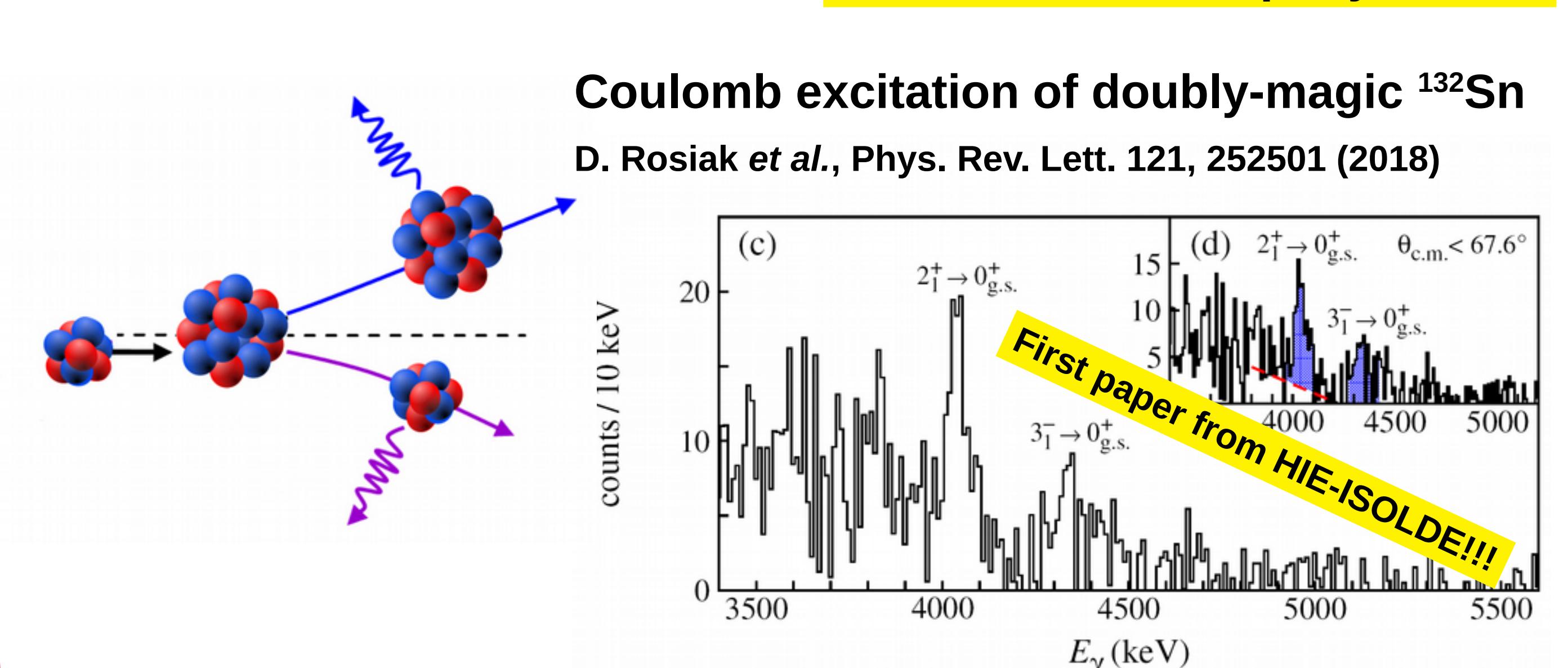
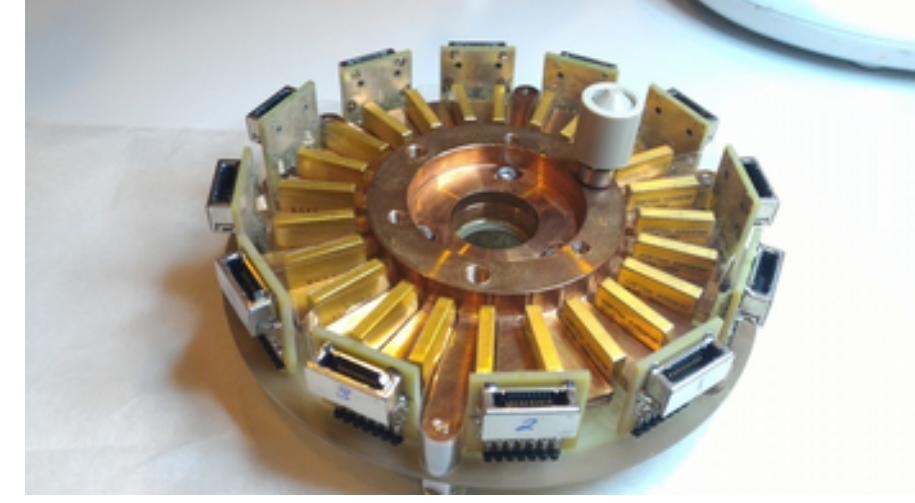
Conversion electron spectrometer
(Uni Jyväskylä)

P. Papadakis et al., EPJA 54, 42 (2018)

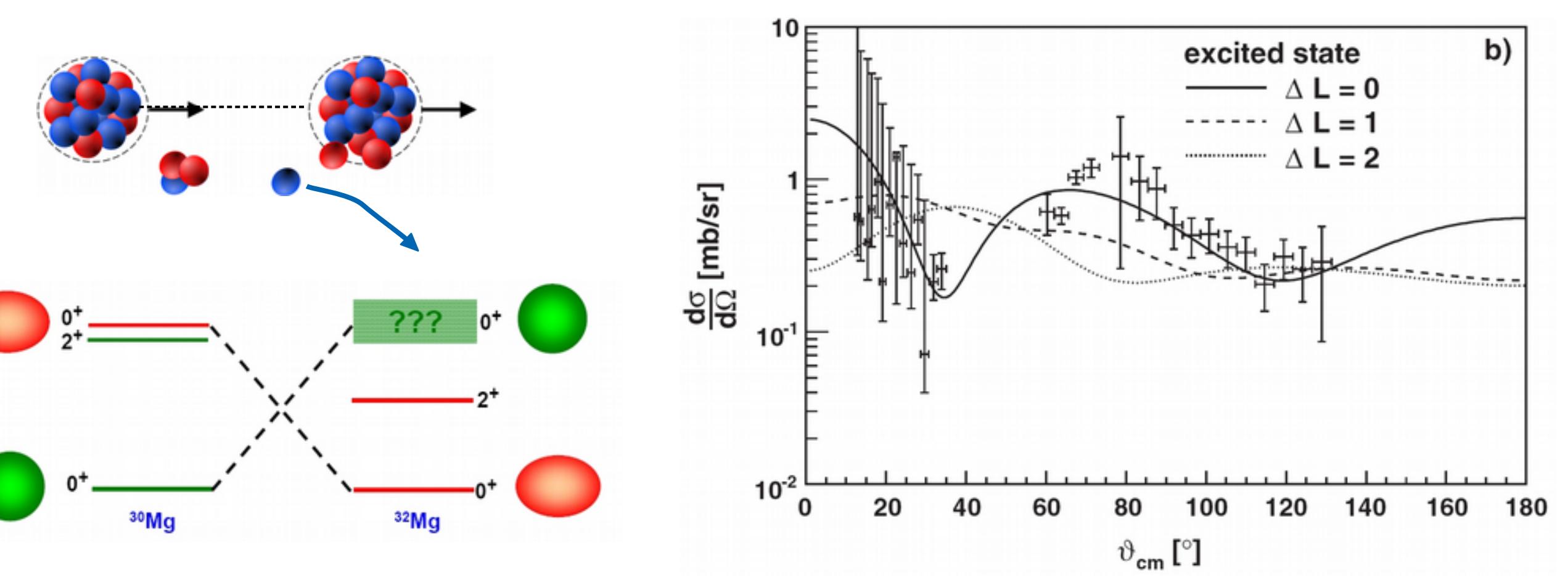


MINIBALL plunger

Direct lifetime measurements
(Uni zu Köln)



$^{30}\text{Mg}(\text{t},\text{p})^{32}\text{Mg}$... two-neutron transfer into the „Island of Inversion“
K. Wimmer et al., Phys. Rev. Lett. 105, 252501 (2010); CERN Courier 7/2011



New T-REX for MINIBALL

Highly-segmented Si detector for nucleon transfer reactions
(TU München, TU Darmstadt, KU Leuven)
V. Bildstein et al., EPJA 48, 85 (2012)

