

Search for proton radioactivity in the trans-lead region

Zenon Janas

for **S235** experiment

Argonne - Edinburgh - GSI - Milano

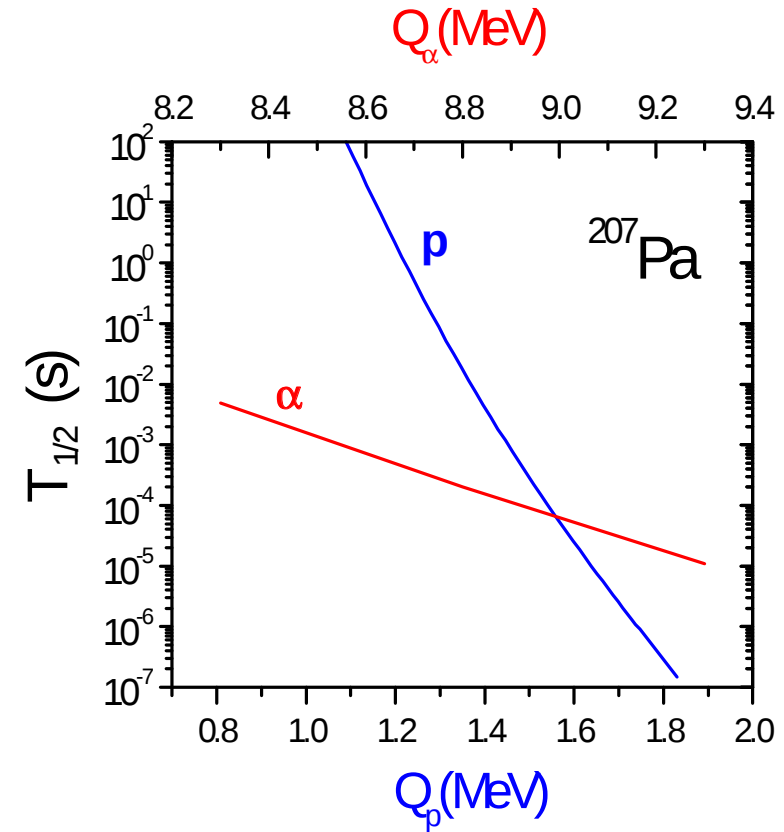
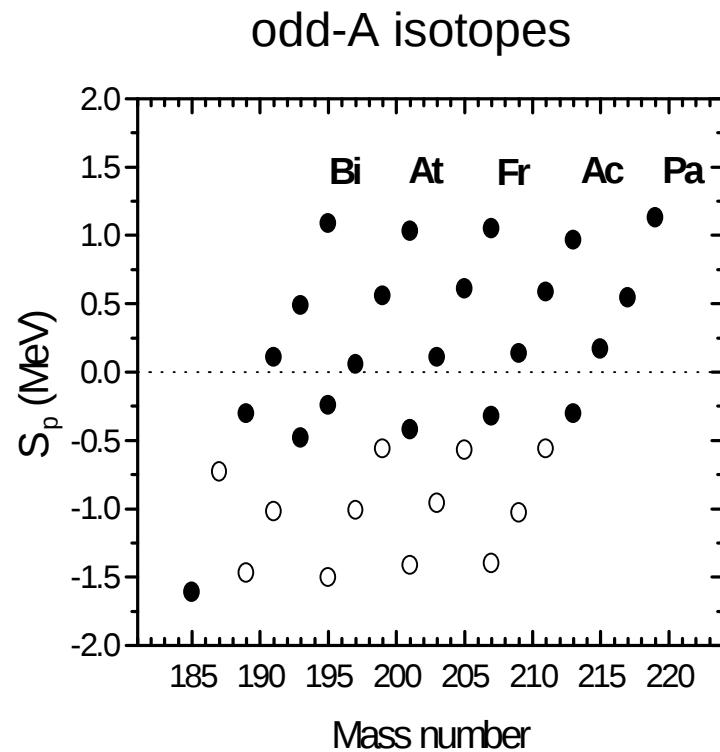
Oak Ridge - Warsaw

Spokepersons: **P.J. Woods, K. Schmidt**

Goals of the experiment

- identification of new proton emitters
- studies of alpha decay chains
- cross-section measurements

Proton emitters in trans-lead region

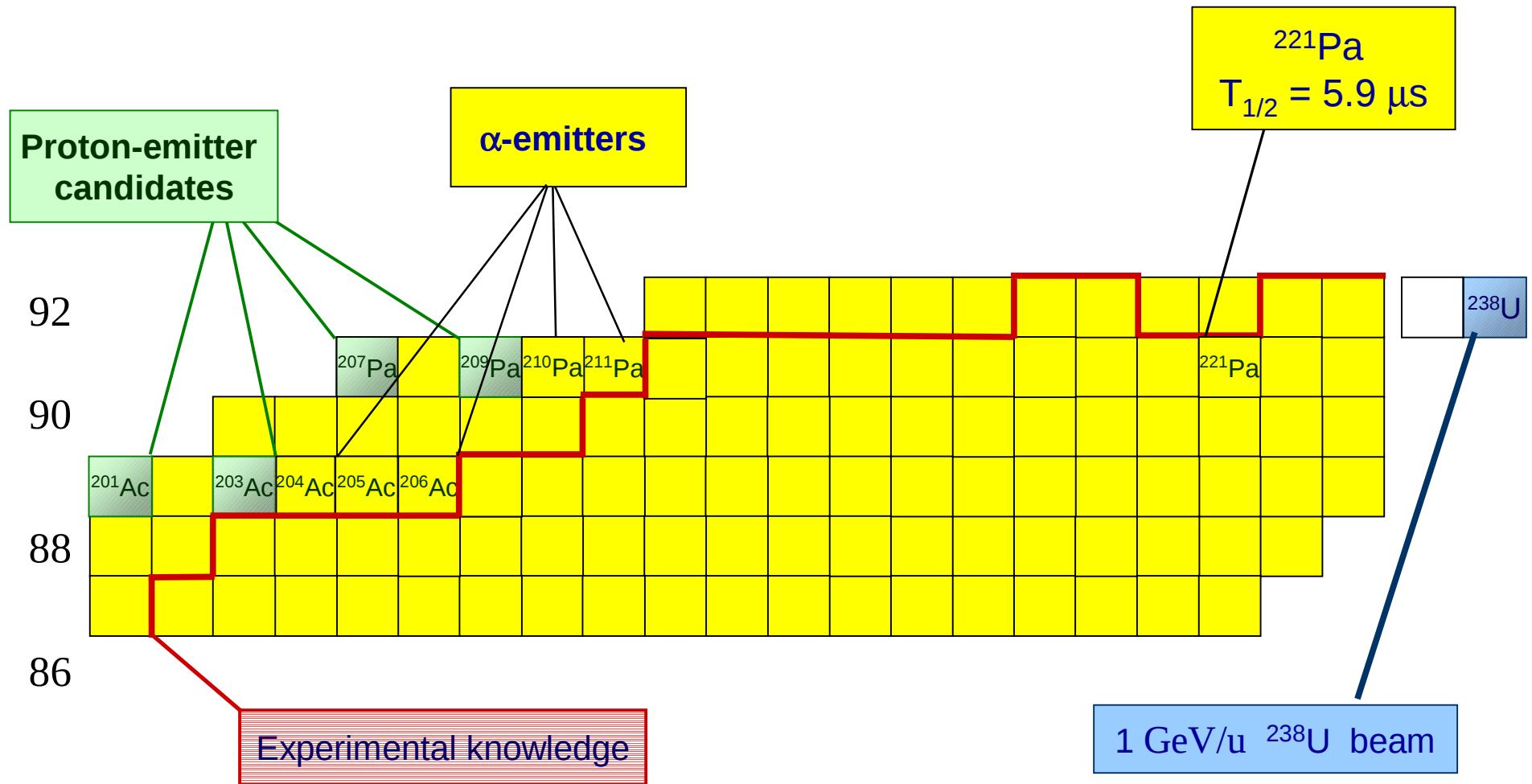


Yu. Novikov et al., Nucl. Phys. A697 (2002) 92

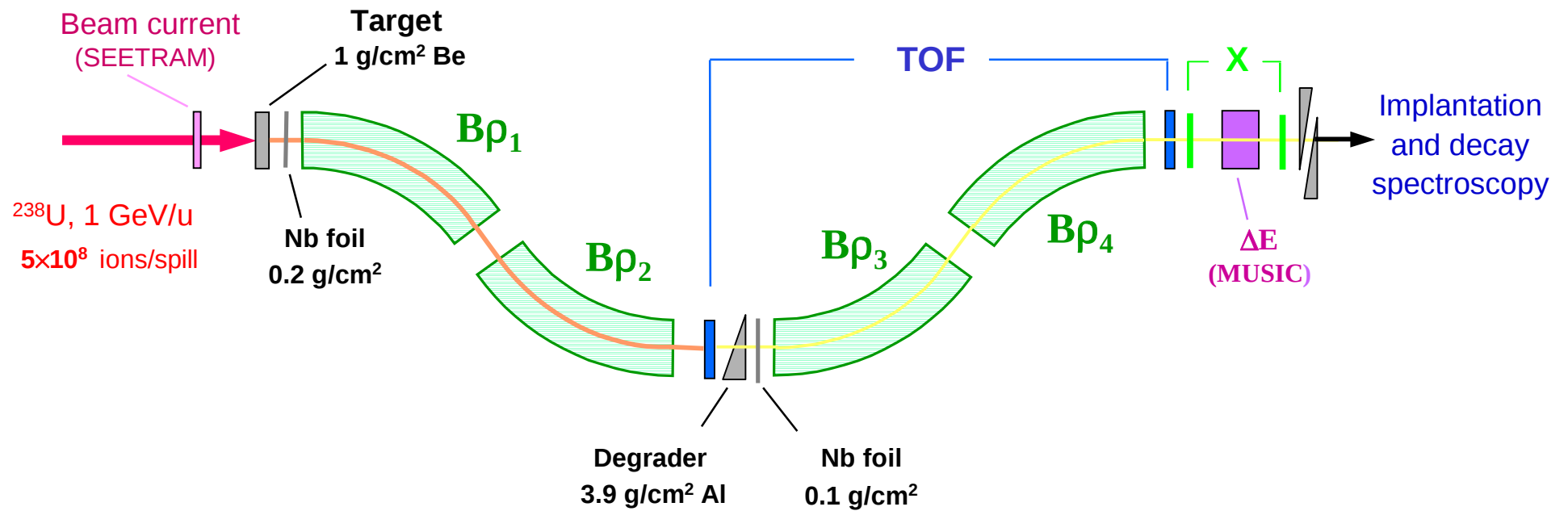
P. Moller, ADNDT 39 (1988) 185

WKB estimate, $l_p=0$

Heavy proton emitters

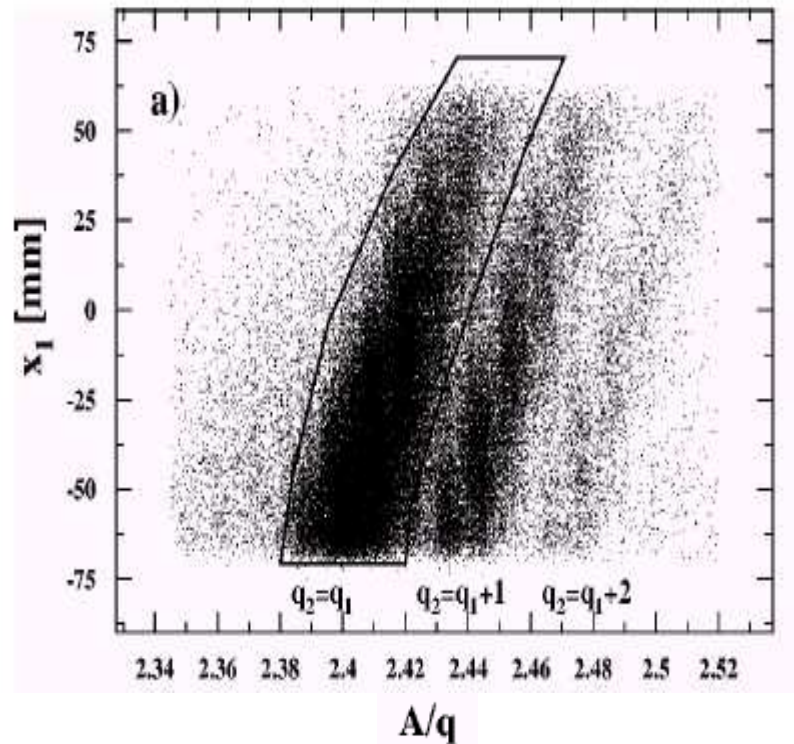


GSI Fragment Separator

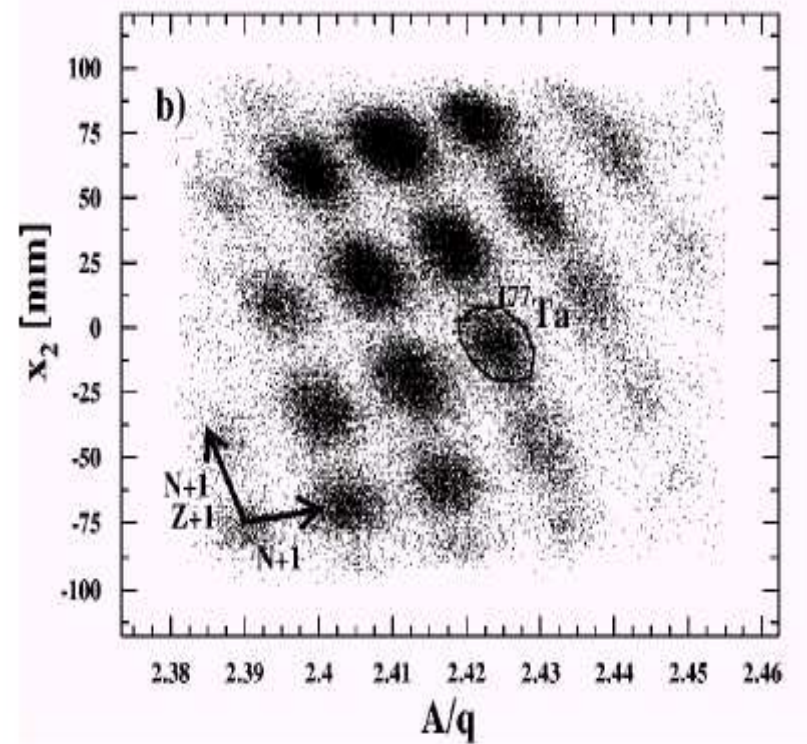


Identification of isotopes

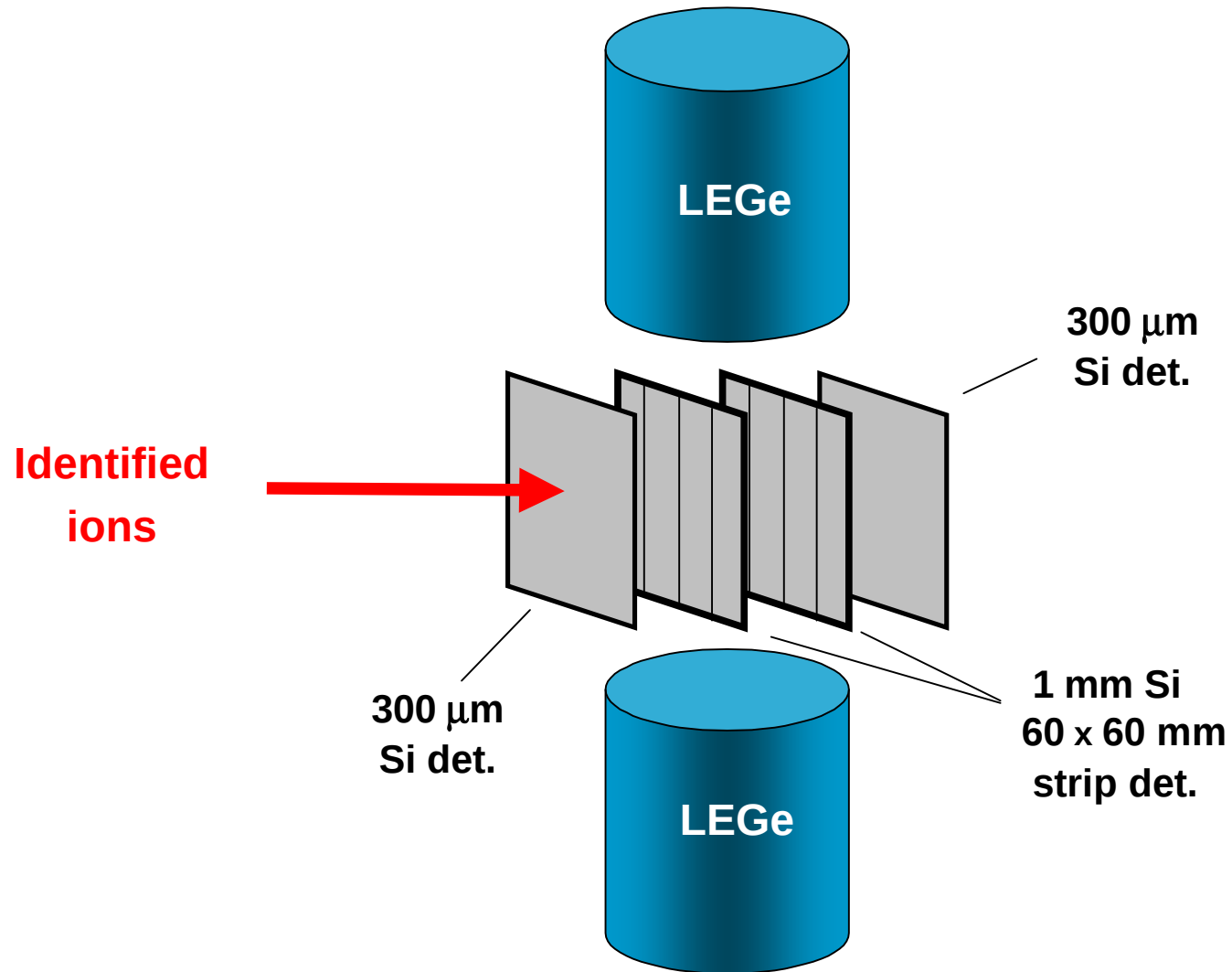
- charge state selection



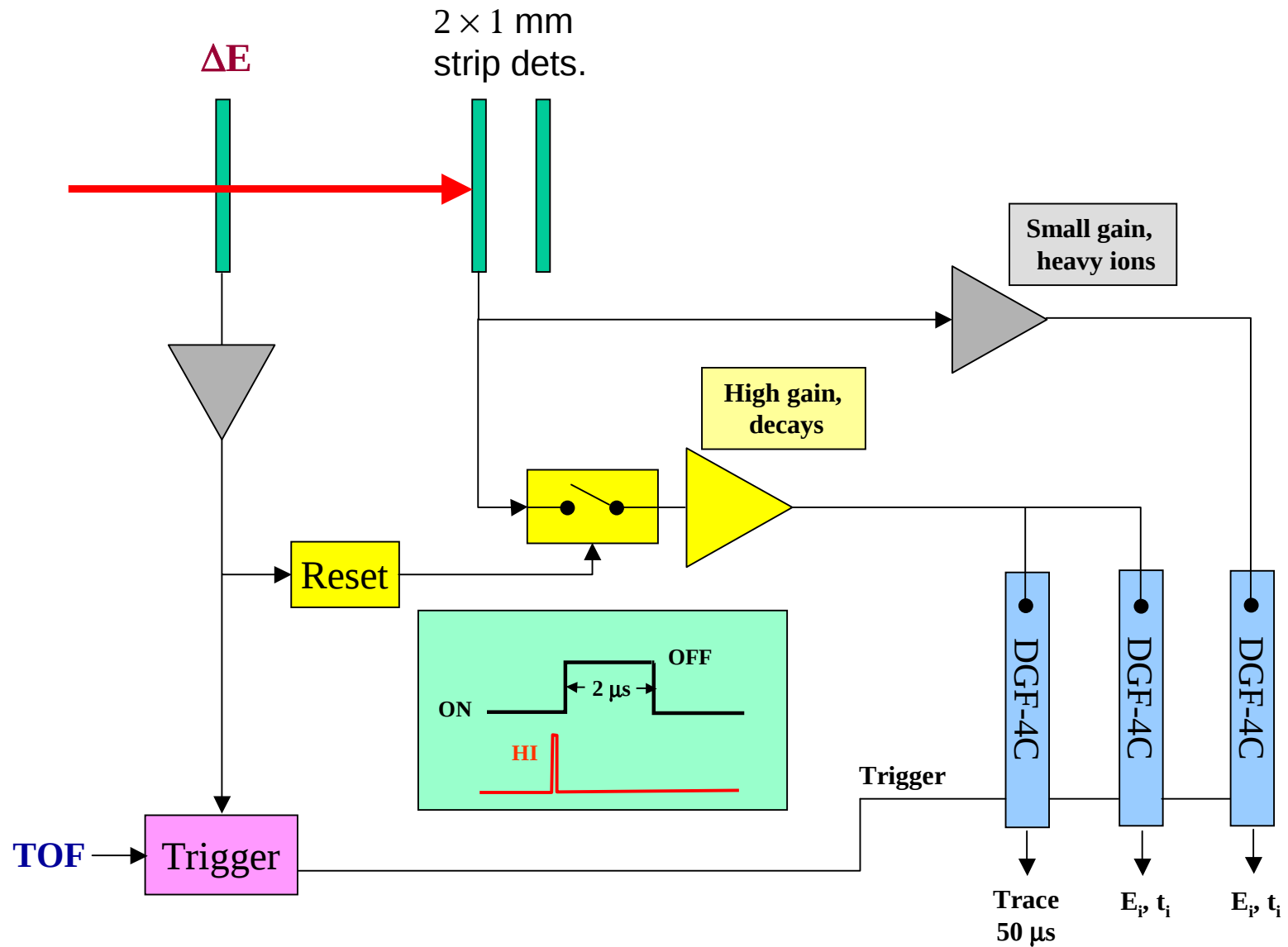
- charge state selection



Implantation set-up



Si telescope electronics



Rate estimate

- 7×10^8 ^{238}U ions/spill
- extrapolated cross-sections

Expected rates

- direct proton emitters



- new alpha emitters



Production cross-sections

