

TUOP04 / TUPLR076, today at 16:00 h



ON THE ACCELERATION OF RARE ISOTOPE BEAMS IN THE REACCELERATOR (REA3) AT THE NATIONAL SUPERCONDUCTING CYCLOTRON LABORATORY AT MSU*

A. C. C. Villari†, G. Bollen, D.B. Crisp, M. Ikegami, A. Lapierre, S.M. Lidia, D.J. Morrissey, S. Nash, R.J. Rencsok, R. Ringle, S. Schwarz, R. Shane, C. Sumithrarachchi, T. Summers and Q. Zhao

* Based on work supported by NSF under grant PHY-11-02511 and the Michigan State University. † email address: villari@frib.msu.edu

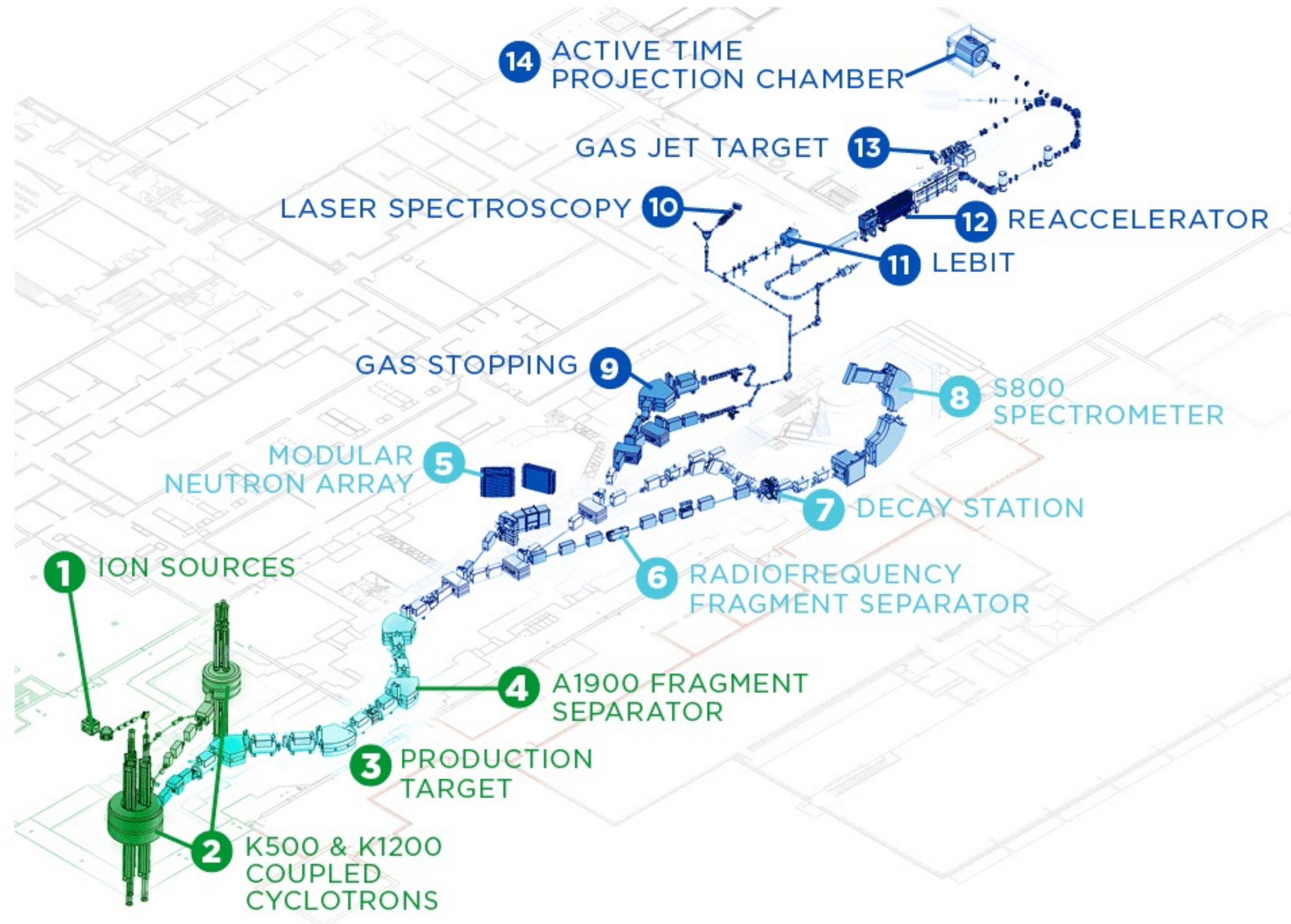
MICHIGAN STATE
UNIVERSITY



U.S. DEPARTMENT OF
ENERGY

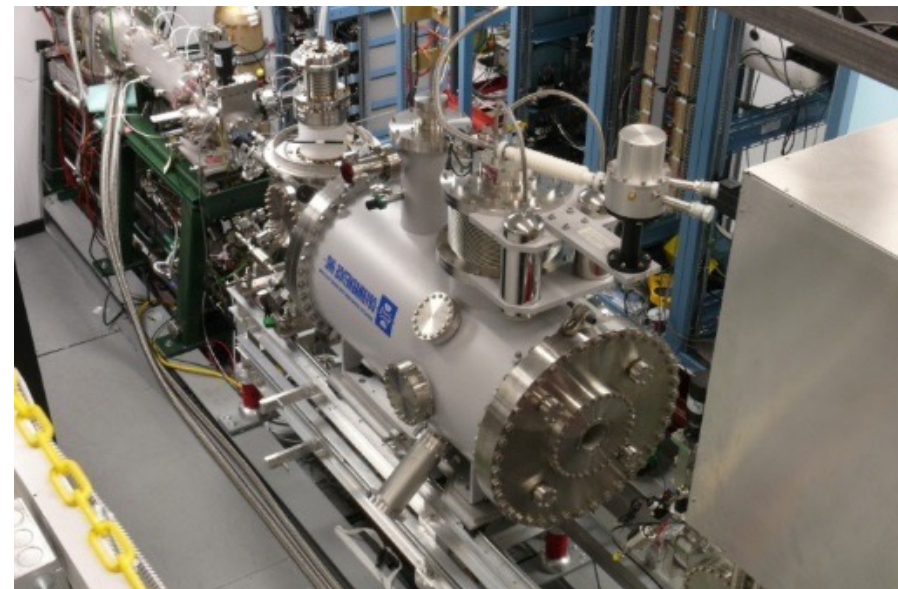
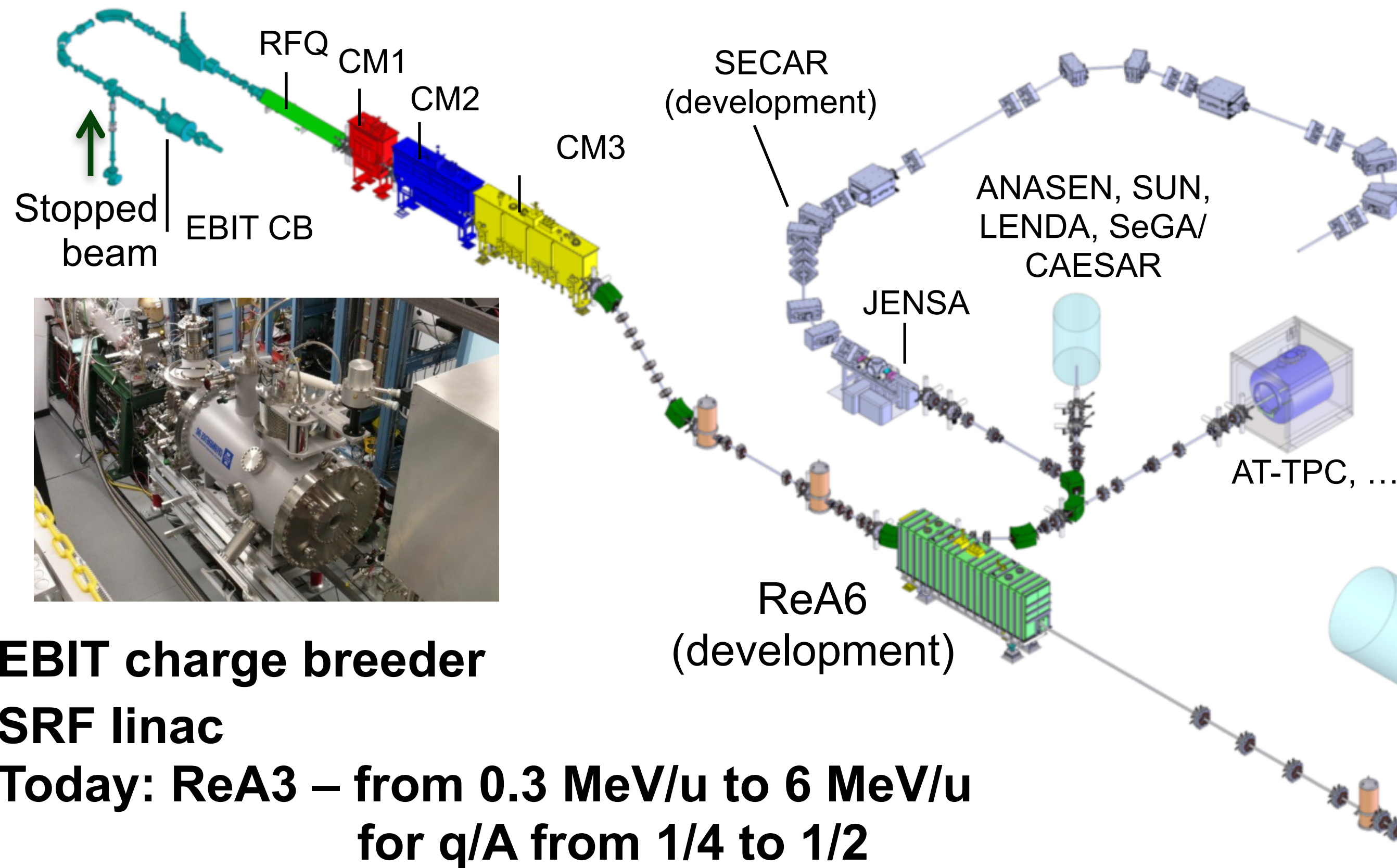
Office of
Science

Overview production and ReA3



Reaccelerated Beams at NSCL and FRIB with ReA Facility

First successful rare isotope beam experiment with ReA3 in September 2015
11 experiments since then



EBIT charge breeder

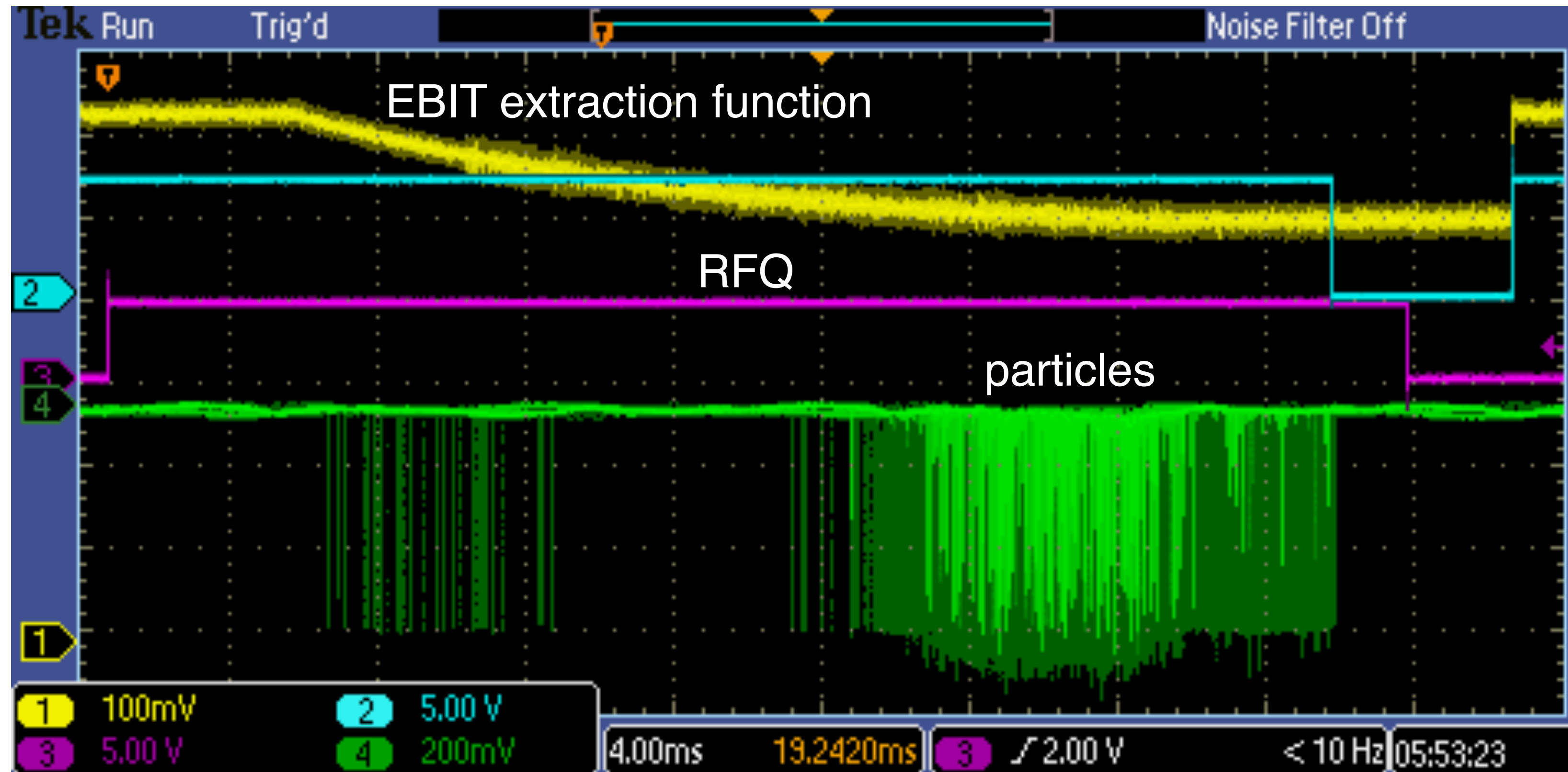
SRF linac

**Today: ReA3 – from 0.3 MeV/u to 6 MeV/u
for q/A from 1/4 to 1/2**



(New beam lines under development)

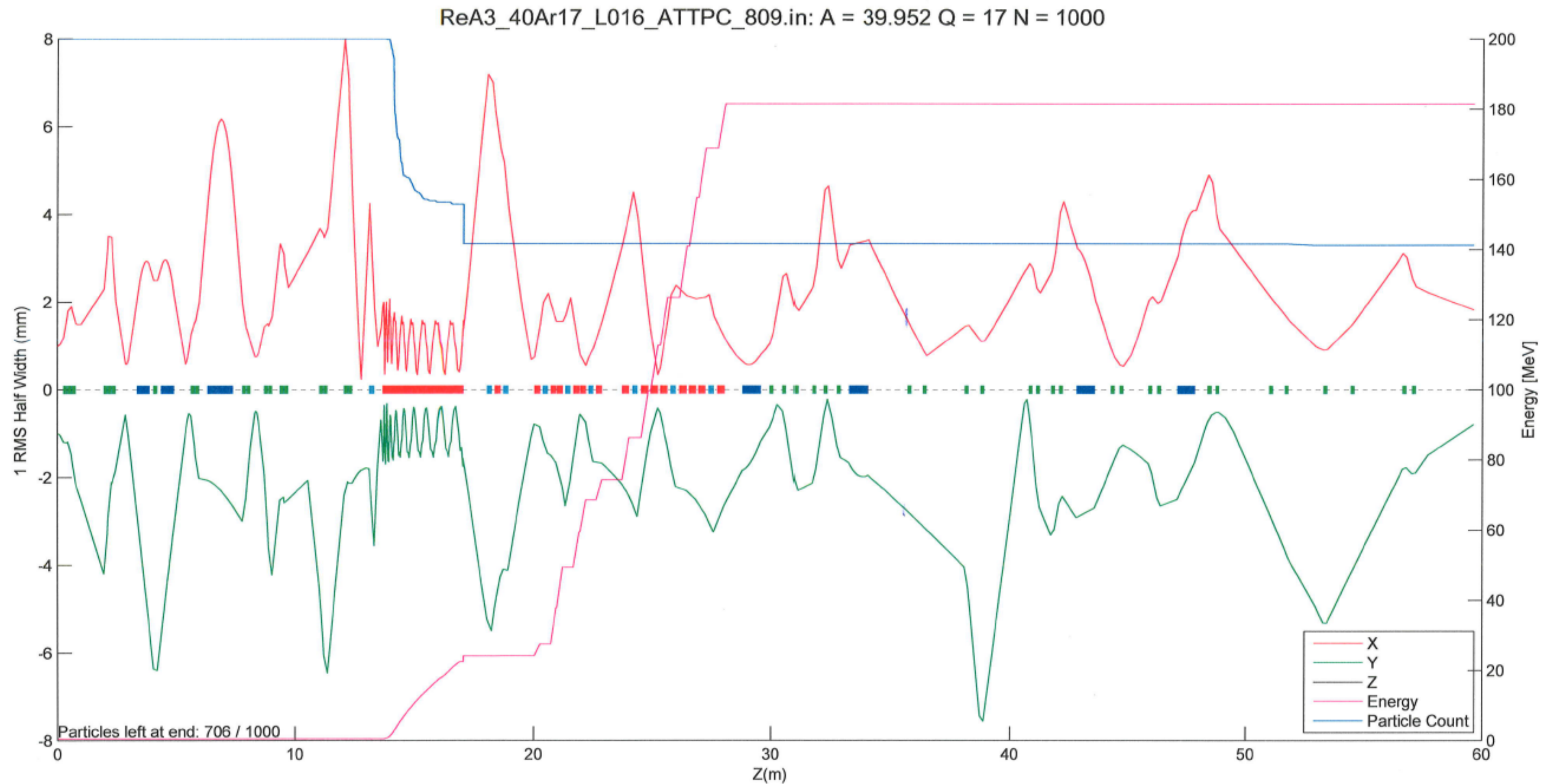
EBIT beam extraction timing - example for ^{78}Kr



15 ms

Stretched extraction using function generator elongates EBIT pulse

DYNAC - multi particle beam simulation

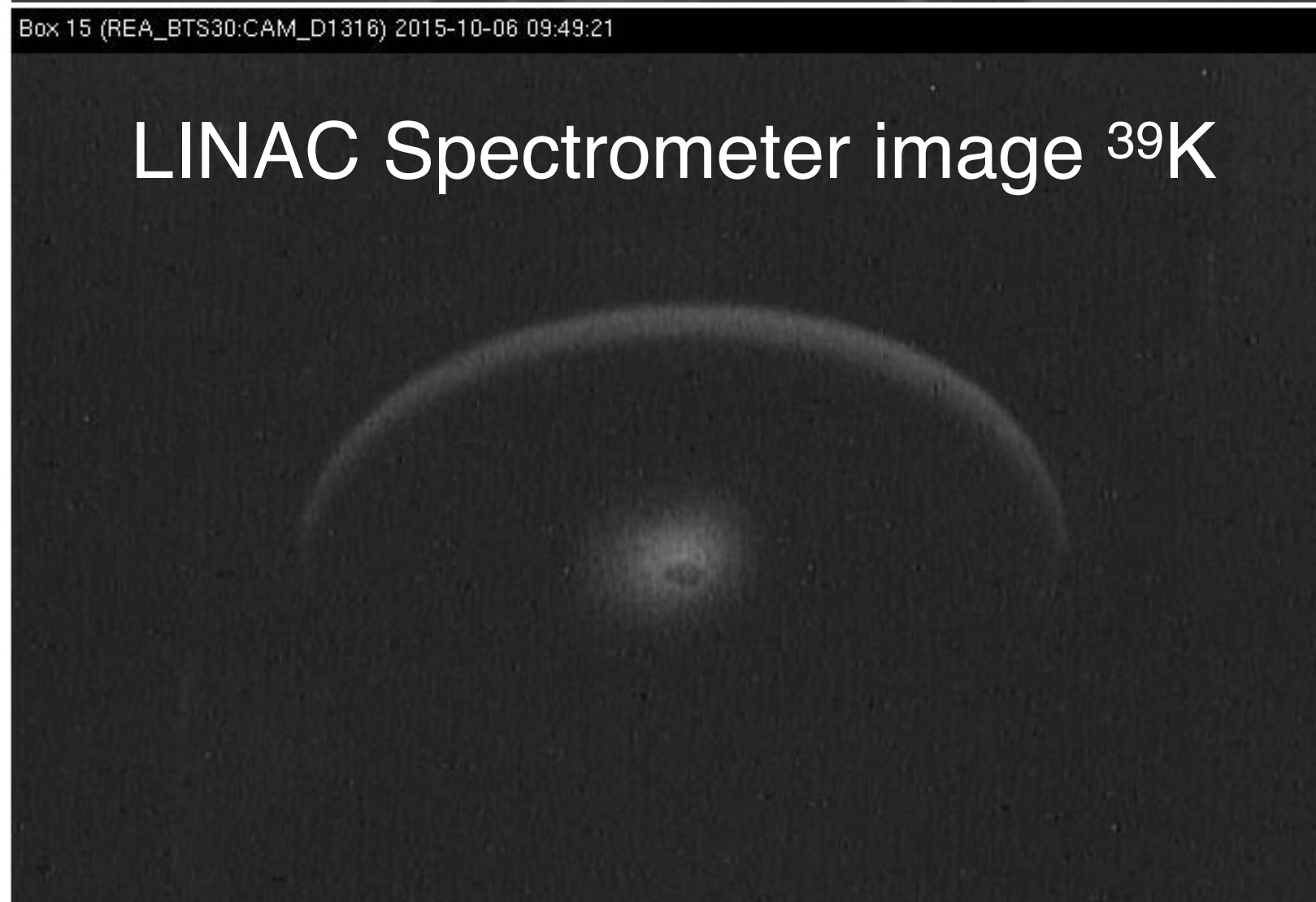


XY Profile Energy Plot Particle Count Emit. Plots 0 Start Position (m) 60 End Position (m)

Good agreement

Daniel Alt

Beam in the General Purpose beam line experimental target



$^{46}\text{K} > 15000$ pps

More: TUPLR076, today starting at 16:00 h