

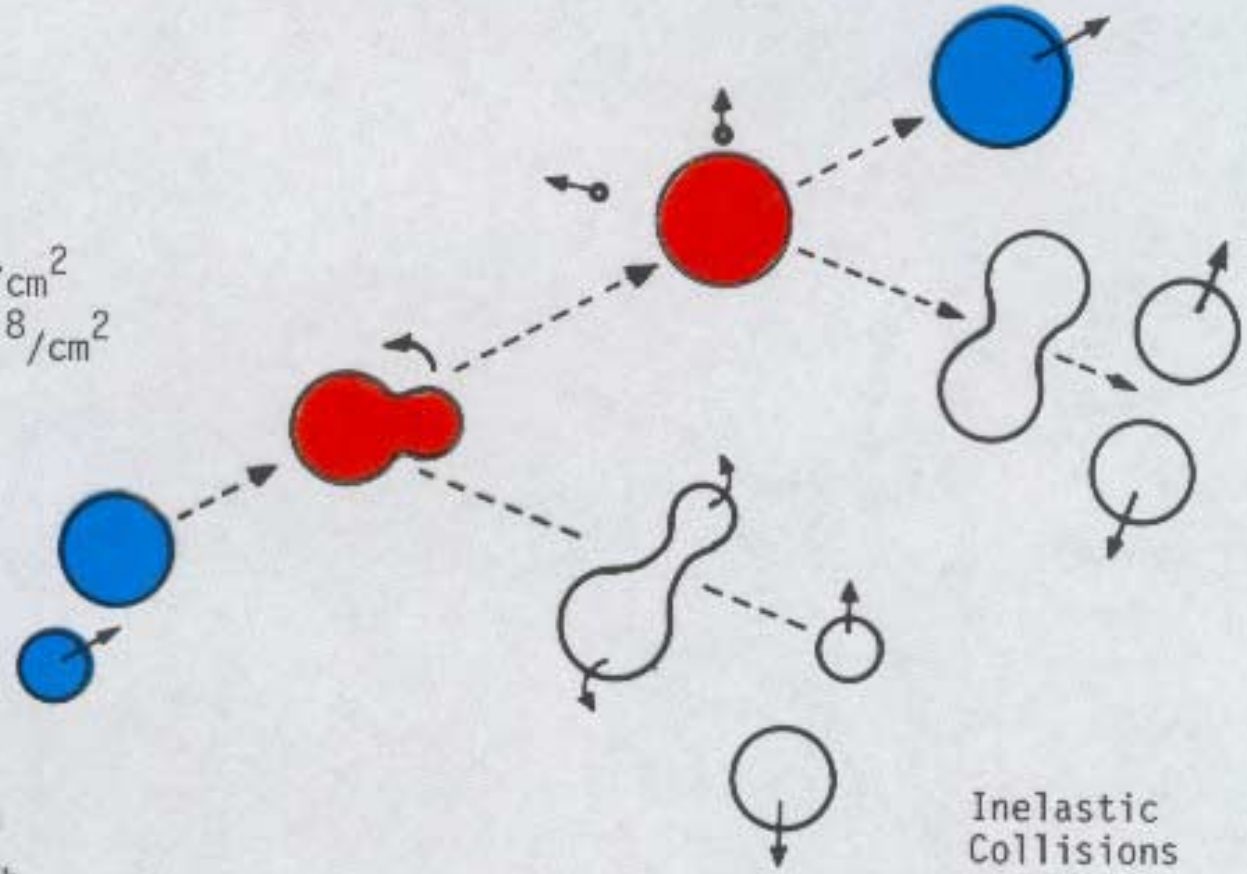
Reactions
 $1 \text{ barn} \cong 3 \cdot 10^9 / \text{h}$

Fusion
 $10^8 / \text{h}$

Evaporation
Residues
 $1 \text{ nbarn} \cong 3 / \text{h}$

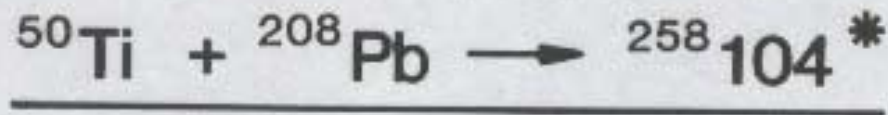
^{208}Pb , $500 \mu\text{g}/\text{cm}^2$
 $\cong 1.4 \cdot 10^{18} / \text{cm}^2$

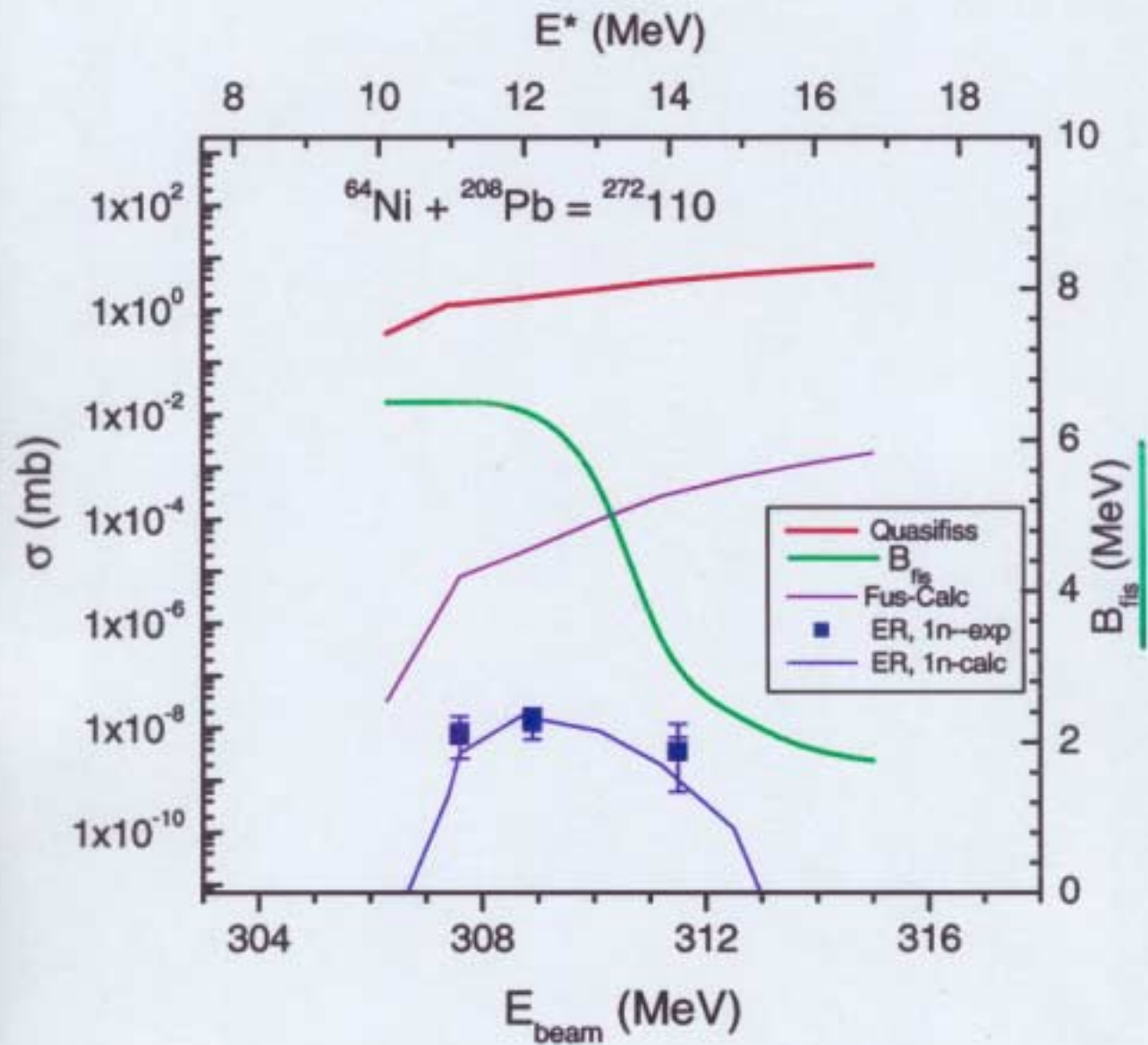
^{50}Ti , 100 pA
 $\cong 2 \cdot 10^{15} / \text{h}$
 $\cong 0.2 \mu\text{g}/\text{h}$



Fission

Inelastic
Collisions
 $3 \cdot 10^9 / \text{h}$

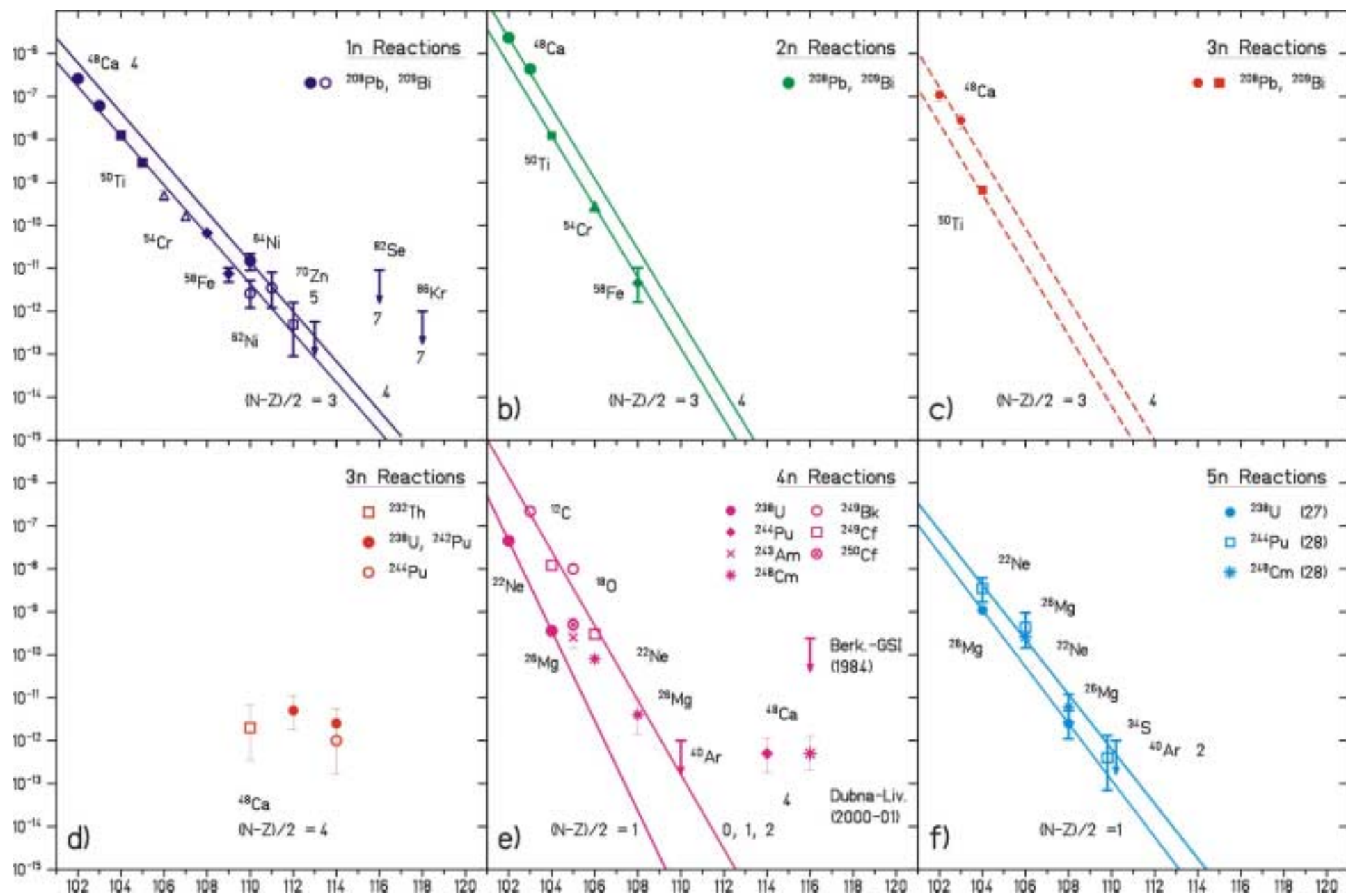




*A.K. Nasirov, G. Giardinà et al.
(2000)*

Support from theory groups

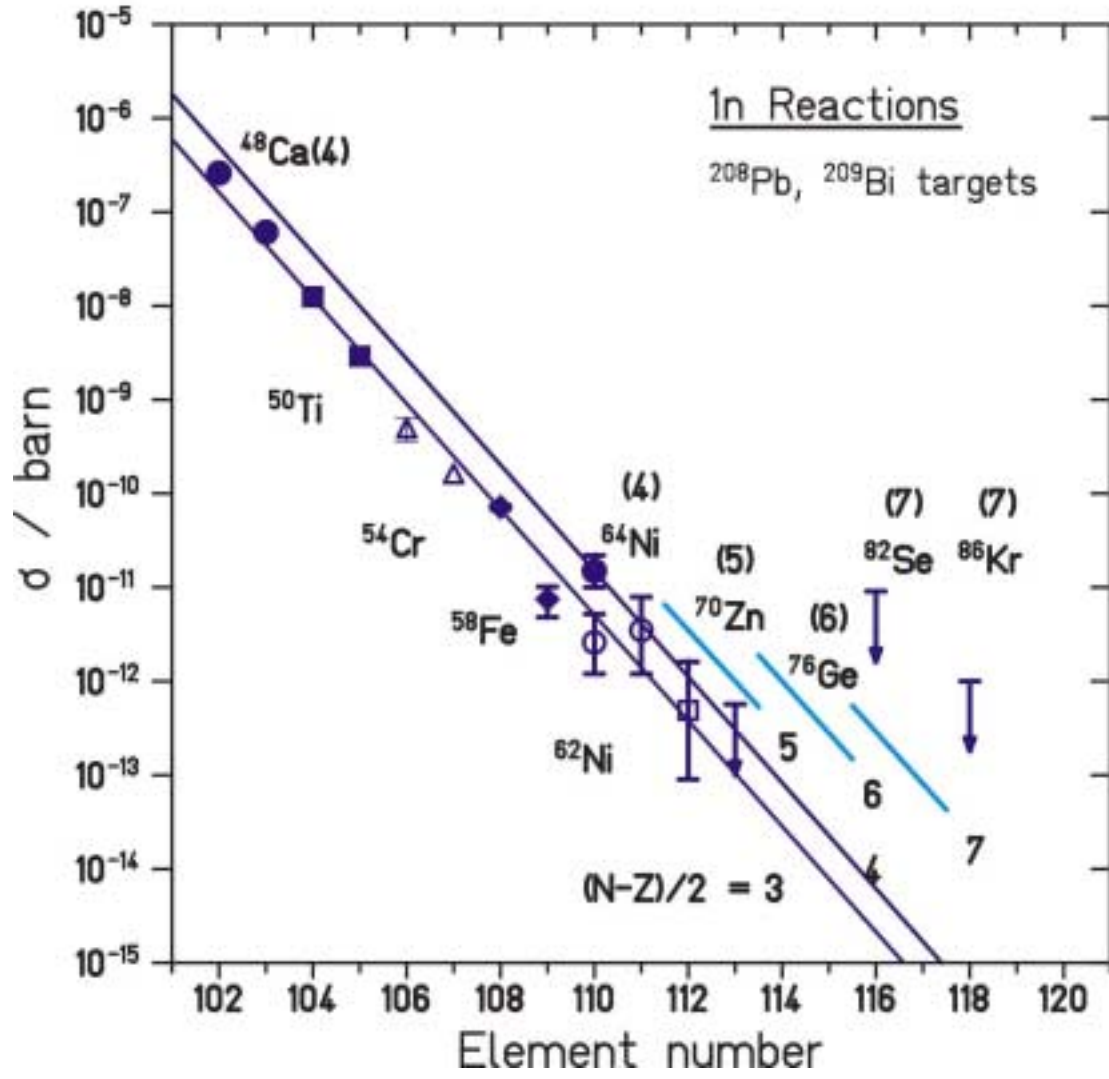
Berkeley	W.J. Swiatecki, et al.	Frankfurt	W. Greiner et al. (Fusion valleys)
Bratislava	M. Veselsky, et al.		M. Bender,
Brussels	P.H. Heenen		J.A. Maruhn, et al.
Catania	G. Giardina, et al.	Giessen	W. Scheid, et al.
Chandigarh	R.K. Gupta, et al.		H. Lenske
Darmstadt	W. Reisdorf (HIVAP)	Kiev	V.Yu. Denisov
	W. Nörenberg,	Kobe	M. Ohta, et al.
Dubna	G.G. Adamian,	Kyoto	Y. Abe, T. Wada, et al.
	N.V. Antonenko,	Los Alamos	P. Möller, et al.
	E.A. Cherepanov,	Munich	P. Ring et al.
	R.V. Jolos,	Oak Ridge	W. Nazarewicz
	V.V. Volkov, et al.	Tokyo	Y. Aritomo, et al.
	Yu.E. Penionzhkevich, et al.	Tashkent	A.I. Muminov,
	V.I. Zagrebaev, et al.		A.K. Nasirov, et al.
	R.N. Sagaidak, et al.	Thessaloniki	G.A. Lalazissis
		Warsaw	S. Cwiok, R. Smolanczuk A. Sobiczewski, I. Muntian



radioactive present future

measuring time for 1 event at beam current:

$3 \times 10^9 / \text{s}$ $3 \times 10^{12} / \text{s}$ $3 \times 10^{13} / \text{s}$



1 μb 9 min 0.5 s 50 ms

1 nb 6 d 8 min 50 s

1 pb 16 y 6 d 14 h

1 fb 1.6 y