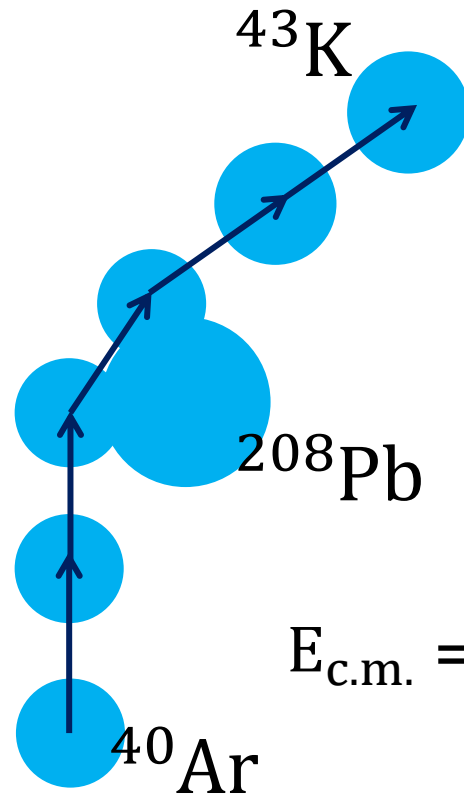
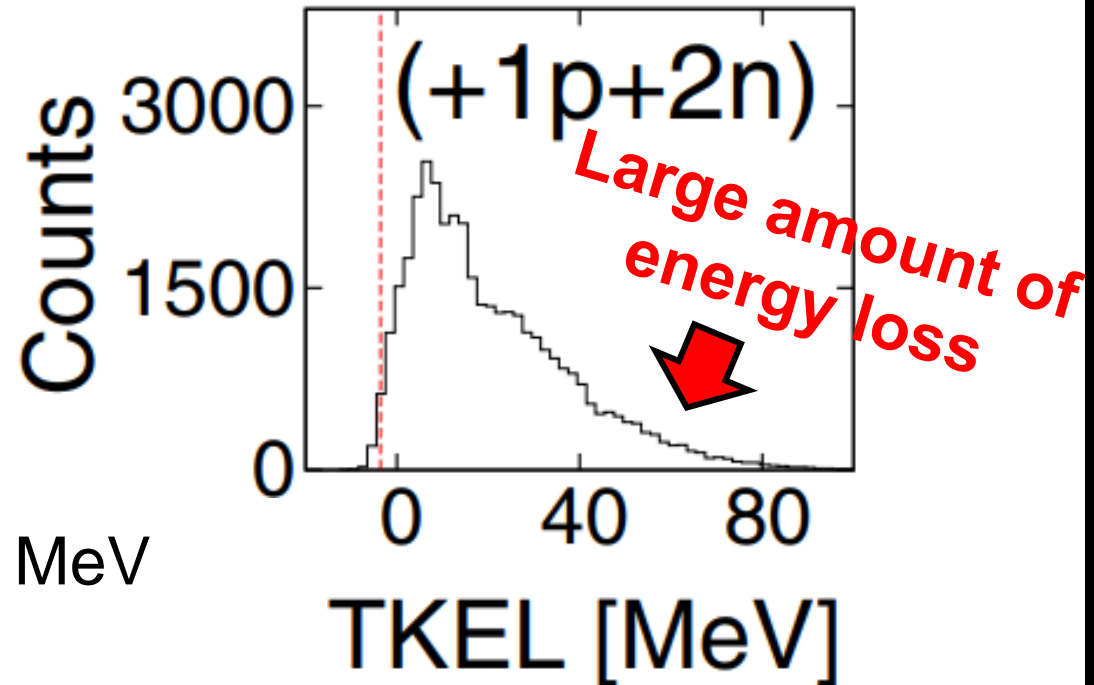


RESEARCH PROJECT



$E_{\text{c.m.}} = 215 \text{ MeV}$

T. Mijatovic, et al, Phys.Rev.C94(2016)064616



What can we learn from energy loss ?

As a phenomenology: **FRICTION**

Microscopic derivation of friction coefficient

RESEARCH PLAN

Key: Langevin equation

Friction coefficient

$$\dot{p}_t = -V'(x_t) - \int_0^t ds \gamma(t, s) p_s + \zeta(t)$$

DONE

THIS TERM
NEXT TERM

Hopefully

General considerations:

- ✓ How to solve it quantum mechanically ?
- ✓ Quantum tunneling in a dissipative system ?
- ✓ How to derive friction coefficient for a specific system ?

Application to nuclear physics:

- ✓ Angular momentum loss ?
- ✓ Quantum coherence in super-heavy elements ?
- ✓ Unified description of nuclear fusion reactions, ✓ Quantum effects on mass transfer, ✓ Comparison with other open quantum systems ...

INTERNATIONAL TRAINING

Orsay, France (18/09/13 ~ 18/09/27)

Discussions with Dr. Denis Lacroix

Hawaii, U.S. (18/10/22 ~ 18/10/29)

Joint Meeting of the APS and the JPS

Saitama (18/12/03 ~ 18/12/09)

International Conference on Nucleus-Nucleus Collisions

IN THIS TERM

Kyoto (19/10/26 ~ 19/11/08)

Nuclear Fission Dynamics 2019, **J. Randrup**

Tokyo (19/11/mid)

Seminar at TITECH in English, **F. Ivanyuk**

Waiting for publication of our paper