



Masako Yamada (Paul Scherrer Institut)

Neutron optics and Scientific computing group



Ph.D (2007-2013)

- ❖ Development of a magnetic focusing lens for pulsed neutron beam
- ❖ Development of a focusing SANS instrument

Former position (2013-2015)

- ❖ Operation&Refinement of an accelerator-based compact neutron source(RANS)
- ❖ Neutron imaging for industrial material (conventional, Bragg edge)

Current position (2015-)

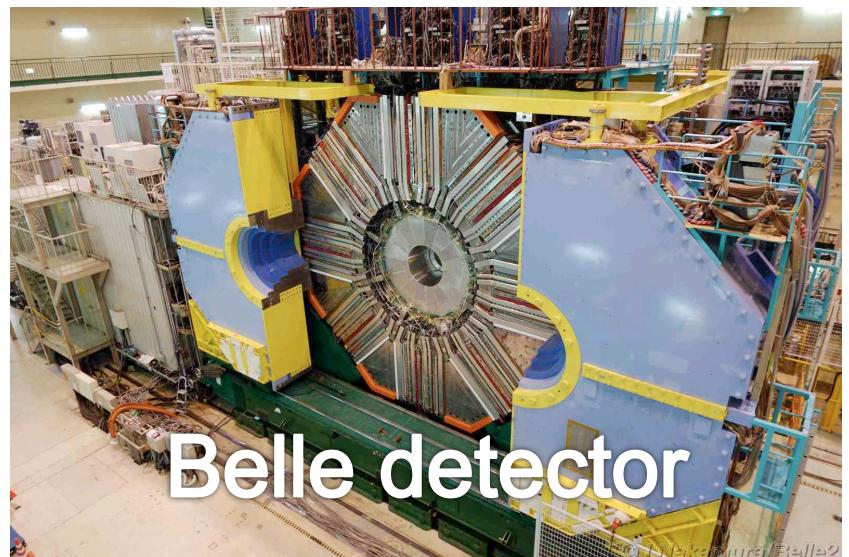
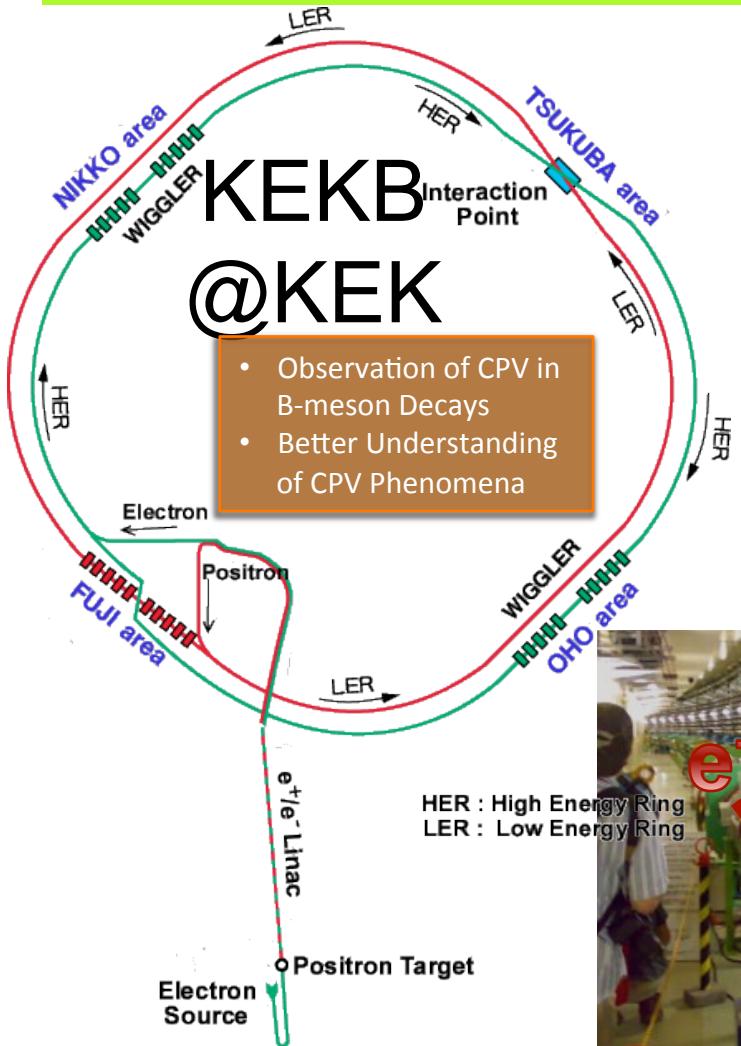
SINQ (The Swiss Neutron Spallation Source) upgrade project

- ❖ Shielding purpose: Fast neutron spectrum measurements with BSS system
- ❖ Instrument upgrade: Guide design of TOF spectrometer, FOCUS.
- ❖ Device development: Adjustable focusing reflective lens, “Adaptive optics”

Coming across Beam Science

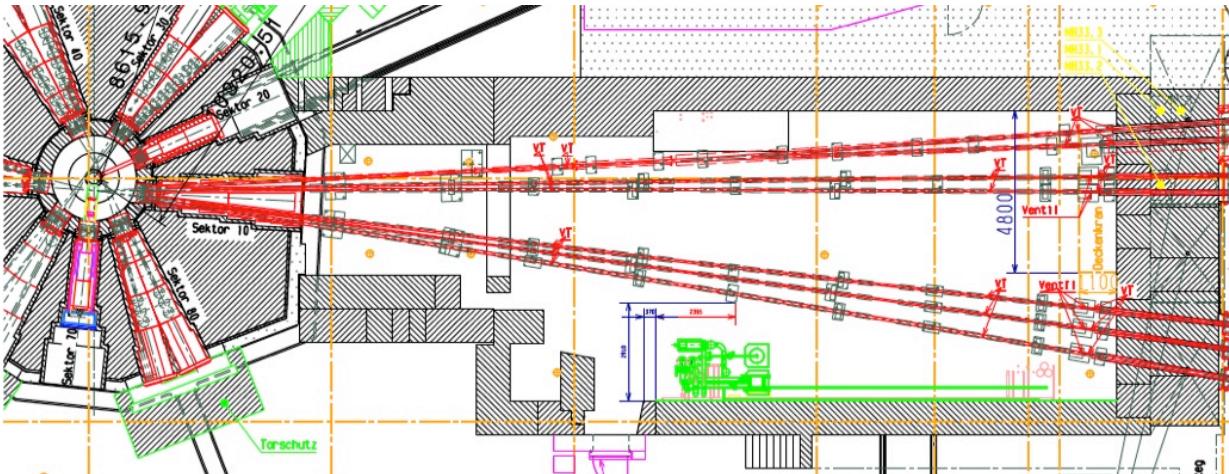
1983 Born in Tsukuba, Ibaraki, Japan

Integration of human knowledge and state-of-the-art technologies



Current task: SINQ upgrade

- Conceptual Design : until 31.12.2016
- Modified shielding installation : 01.09.2019 – 31.12.2019
- Commissioning of part of instruments : 01.01.2020 - 28.02.2020

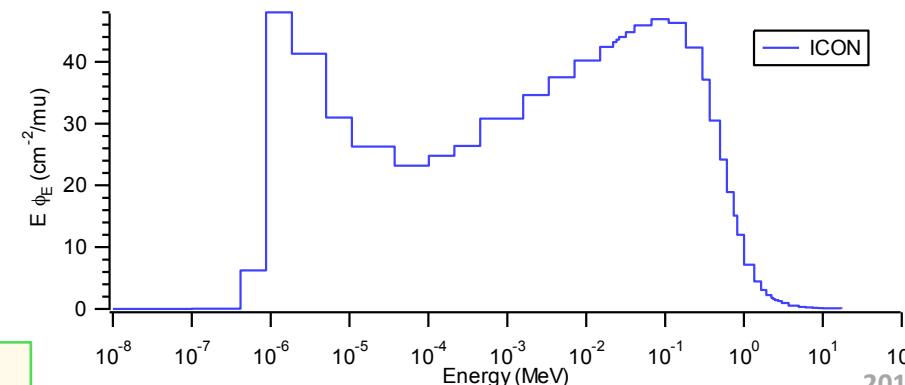
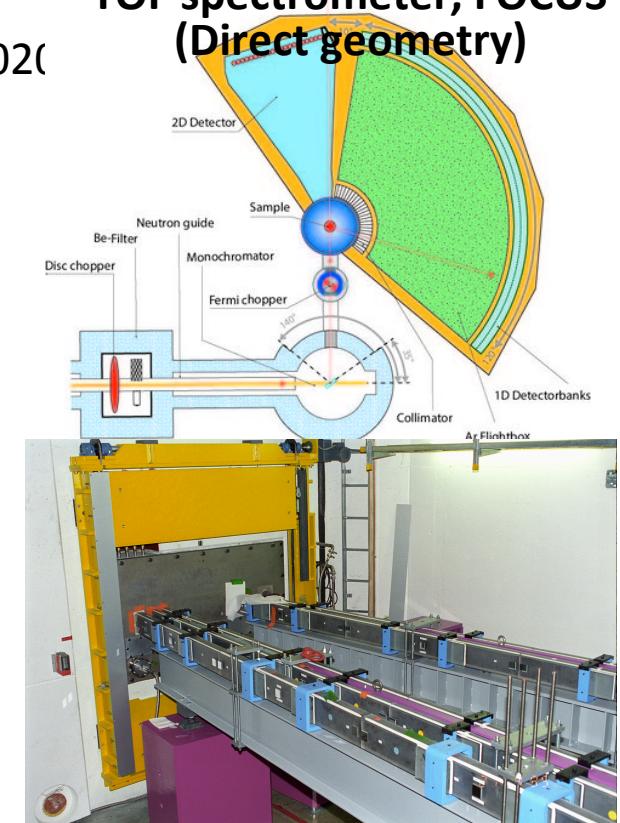


2. Shielding design mainly for fast neutrons



Bonner sphere spectrometer

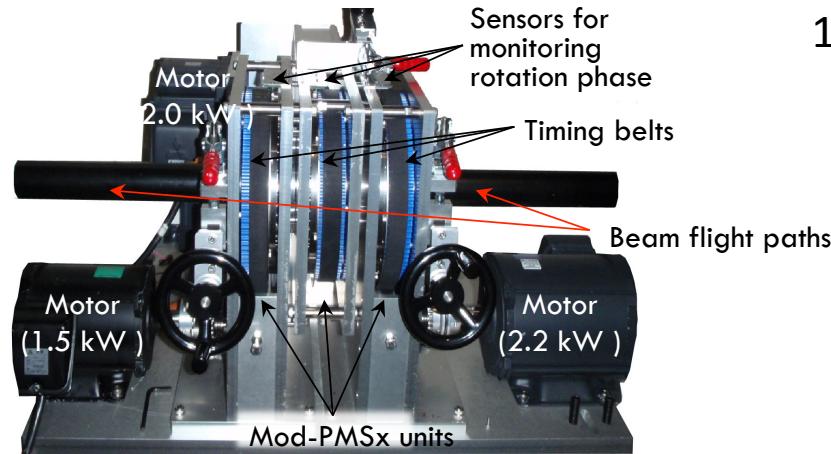
1. Guide design of TOF spectrometer, FOCUS (Direct geometry)



2016/04/01

Appendix

Magnetic TOF lens

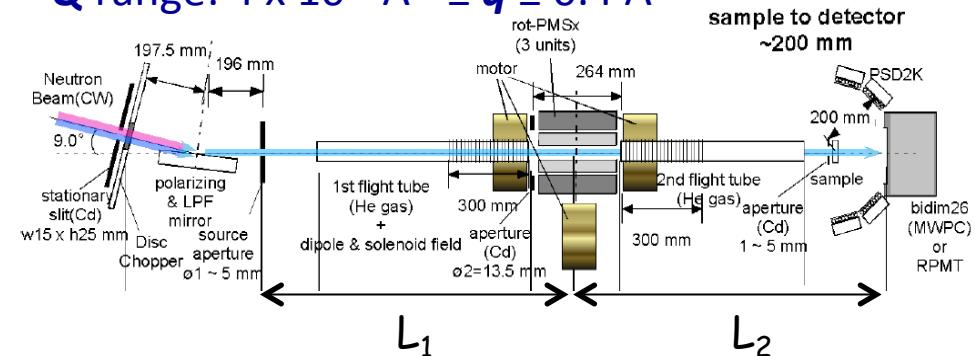


$27.5 < \lambda [\text{\AA}] < 55$, $f = 0.46\text{m}$

Application

1. TOF-focusing-polarizing SANS

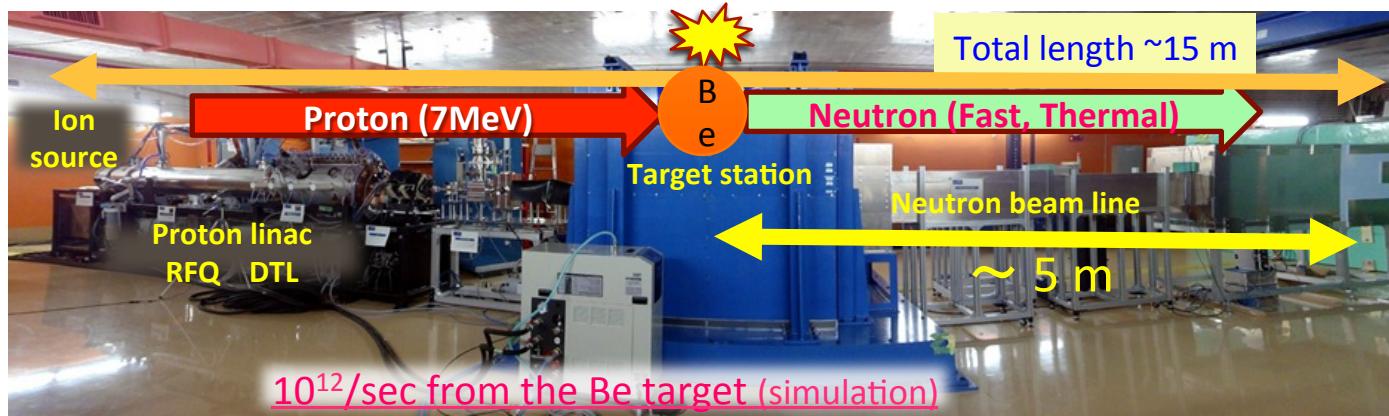
$$Q \text{ range: } 4 \times 10^{-3} \text{ \AA}^{-1} \leq q \leq 0.4 \text{ \AA}^{-1}$$



2. Neutron Image Magnification

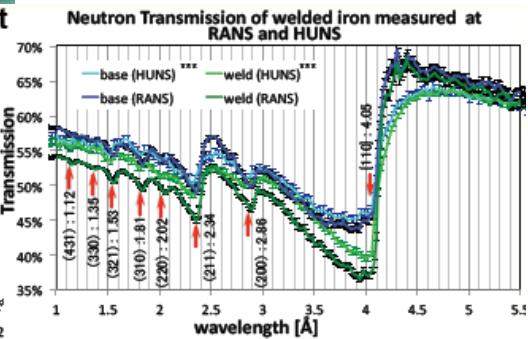
magnification x 5

Accelerator-based compact neutron source, RANS



Application

1. Tomography
2. Bragg-edge imaging



2016/04/01